# TO STUDY THE QUALITY OF LIFE INDEX IN CHRONIC URTICARIA

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I hereby declare that the thesis entitled "**TO STUDY THE QUALITY OF LIFE INDEX IN CHRONIC URTICARIA**" submitted towards partial fulfillment of the requirements for the award of **MD in Dermatology, Venereology and Leprosy** degree to BFUHS is a compilation of original work carried out by me under the supervision of Dr. Sukhjot Kaur, Associate Professor and Dr. Sunil Gupta, Professor & Head, Department of Dermatology, Venereology and Leprosy. No part of this thesis has formed the basis for the award of any degree previously.

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*Dedicated*

*to*

*my Family*

*&*

*Teachers*

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**Dr. Shriya Garg**

## LIST OF ABBREVIATIONS

| | | |
|---|---|---|
| ACE | - | ANGIOTENSIN CONVERTING ENZYME |
| ASST | - | AUTOLOGOUS SERUM SKIN TEST |
| BATs | - | BASOPHIL ACTIVATION TESTS |
| CInDU | - | CHRONIC INDUCIBLE URTICARIA |
| CIU | - | CHRONIC IDIOPATHIC URTICARIA |
| CIU | - | CHRONIC IDIOPATHIC URTICARIA |
| CIU/A | - | CHRONIC IDIOPATHIC URTICARIA WITH OR WITHOUT ANGIOEDEMA |
| CRP | - | C- REACTIVE PROTEIN |
| CSU | - | CHRONIC SPONTANEOUS URTICARIA |
| CU-Q2oL | - | CHRONIC URTICARIA QUALITY OF LIFE QUESTIONNAIRE |
| DALYs | - | DISABILITY-ADJUSTED LIFE YEARS |
| DLQI | - | DERMATOLOGY LIFE QUALITY INDEX |
| DPU | - | DELAYED PRESSURE URTICARIA |
| EAACI | - | EUROPEAN ACADEMY OF ALLERGY AND CLINICAL IMMUNOLOGY |
| EDF | - | EUROPEAN DERMATOLOGY FORUM |
| ESR | - | ERYTHROCYTE SEDIMENTATION RATE |
| GA2LEN | - | GLOBAL ALLERGY AND ASTHMA EUROPEAN NETWORK |
| HRQoL | - | HEALTH RELATED QUALITY OF LIFE |
| IgE | - | IMMUNOGLOBULIN E |
| IL | - | INTERLEUKIN |
| N | - | NUMBER OF CASES |
| NSAIDs | - | NON- STEROIDAL ANTI- INFLAMMATORY DRUGS |
| Q1 | - | QUESTION 1 OF DLQI QUESTIONNAIRE |
| Q2 | - | QUESTION 2 OF DLQI QUESTIONNAIRE |
| Q3 | - | QUESTION 3 OF DLQI QUESTIONNAIRE |
| Q4 | - | QUESTION 4 OF DLQI QUESTIONNAIRE |
| Q5 | - | QUESTION 5 OF DLQI QUESTIONNAIRE |

| | | |
|---|---|---|
| Q6 | - | QUESTION 6 OF DLQI QUESTIONNAIRE |
| Q7 | - | QUESTION 7 OF DLQI QUESTIONNAIRE |
| Q8 | - | QUESTION 8 OF DLQI QUESTIONNAIRE |
| Q9 | - | QUESTION 9 OF DLQI QUESTIONNAIRE |
| Q10 | - | QUESTION 10 OF DLQI QUESTIONNAIRE |
| QoL | - | QUALITY OF LIFE |
| S.D. | - | STANDARD DEVIATION |
| SAT-P | - | SATISFACTION PROFILE |
| SF-36 | - | SHORT FORM- 36 HEALTH SURVEY |
| UAS | - | URTICARIA ACTIVITY SCORE |
| WAO | - | WORLD ALLERGY ORGANIZATION |

# ABSTRACT

**Introduction:** Chronic urticaria is a condition characterized by the appearance of weals or angioedema or both occurring for more than 6 weeks. It is classified into chronic spontaneous urticaria and chronic inducible urticaria. Being a common condition in dermatology, its etio-pathogenesis remains debatable. Therefore, it is difficult to treat and can severely affect the quality of life (QoL).

**Aim and Objective:** To study the quality of life in patients suffering from chronic urticaria

**Materials and Methods:** One hundred and fifty (150) clinically diagnosed cases of chronic urticaria attending outpatient and inpatient Department of Dermatology of Dayanand Medical College and Hospital were taken. Detailed history including duration of the disease and clinical examination was done. In addition, each patient was asked to fill Dermatology Life Quality Index (DLQI) questionnaire which comprises of 10 questions related to daily activities. The final outcome was assessed in the terms of type of urticaria and the DLQI score.

**Results:** In this study of 150 patients, there was female preponderance with male: female ratio of 1:1.68. The mean age was 38.51 $\pm$ 12.813 years. Depending on the history and clinical features, 109 patients were diagnosed as chronic spontaneous urticaria, 25 patients as chronic spontaneous urticaria with symptomatic dermographism, 10 patients as cholinergic urticaria, 3 patients as cholinergic urticaria with symptomatic dermographism, 2 patients as delayed pressure urticaria and 1 patient as chronic spontaneous urticaria with delayed pressure urticaria. The mean DLQI score was highest for cholinergic urticaria while it was lowest for chronic spontaneous urticaria with delayed pressure urticaria.

**Conclusion:** Based on the results, it was found that chronic urticaria (both spontaneous and inducible) has a significant impact on quality of life. Therefore, it should be considered while evaluating a patient's response to the treatment.



**Keywords:** Chronic urticaria, DLQI, Quality of life

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# INTRODUCTION

Apart from dermatology department, urticaria is one of the common presenting complaint in allergy and emergency departments.[1] Urticaria (also called hives or nettle rash) is used to describe a disease that may present with short lived itchy weals, angioedema or both. It may be spontaneous or inducible. It can be acute (disease resolving in less than 6 weeks) or chronic (continuous disease lasting for 6 weeks or more). The intermittent and the episodic presentations are included in the definition of chronic urticaria.[2,3]

It is estimated that the prevalence of chronic urticaria in the general population worldwide is up to 1%. 30-50 years is the most commonly affected age group. Prevalence is seen to be twice as more in females than males.[4]

Chronic urticaria is further classified into idiopathic or spontaneous urticaria and inducible or physical urticaria.[4,5] Chronic spontaneous urticaria (CSU) is the most common type and no cause has been determined for it.[5] In chronic inducible urticaria, symptoms are caused by external factors such as cold, heat, pressure, vibration or water, thereby classifying it further into the following subtypes:[6,7]

1. Cold urticaria
2. Solar urticaria
3. Heat urticaria
4. Cholinergic urticaria
5. Delayed pressure urticaria
6. Vibratory angioedema
7. Symptomatic dermographism
8. Aquagenic urticaria
9. Contact urticaria

The weals in acute or chronic urticaria usually last less than 24 hours except for chronic inducible-delayed pressure urticaria where it can last for as long as 48 hours. The weals of chronic urticaria have to be differentiated from those of urticarial vasculitis where weals, by definition last longer than 24 hours.[8]

The perilesional skin is usually bright red in comparison to the pale color of the weal due to the pressure effect of the dermal edema on the engorged post capillary venules. But in some instances the perilesional skin is paler. This phenomenon is called “the steal effect”. It is a phenomenon in which the increased arterial blood flow in the weal leads to deprivation of the blood in the surrounding skin. This is seen in acute urticaria and chronic inducible-cholinergic urticaria.[8]

Activation of mast cells in the dermis have been implicated in the pathogenesis of urticaria.[9] Activation of the mast cells leads to the secretion of preformed mediators from the intracytoplasmic granules such as histamine, heparin, tryptase. This leads to immediate phase reaction, i.e, edema.[9,10]

The European Academy of Allergy and Clinical Immunology (EAACI) in 2013, published the criteria for the diagnosis of autoreactive urticaria. In everyday practice, autologous serum skin test is the only diagnostic test available for the same. It has a specificity of 80% and sensitivity of 70%.[11] The presence of autoantibodies in adults is associated with poor prognosis, longer disease duration and more intensive therapy while in children it does not hold any prognostic significance.[12,13]

Other autoimmune diseases can be found along with chronic urticaria in some patients.[14] This view is supported by the presence of antithyroid antibodies in approximately 27% of adults and 4-17% of children suffering from CSU.[15,16]

A link between chronic urticaria and coeliac disease has also been found in children. In such cases gluten free diet helped to achieve remission of chronic urticaria.[17]

Ingestion of certain food products such as nuts, soy, milk, eggs can trigger acute urticaria. Such patients should be screened thoroughly for any potential food allergen as it can lead to anaphylaxis in future. This is commonly termed as Intolerance urticaria.[18] Recent studies have shown that food allergy, though uncommon, can cause CSU.[19]

Excessive amounts of histamine in certain foods or metabolic enzyme deficiency of diamine oxidase (enzyme responsible for degradation of histamine) can lead to histamine intolerance which is responsible for disease recurrence. Intestinal mucosa (enterocytes) produce diamine oxidase. Certain foods such as tuna fish, cheese, tomatoes, wine, beer and drugs such as imipenem, clavulanic acid, pancuronium, metoclopramide suppress this enzyme, leading to excess of histamine in the gut.[20,21]

Several adult studies have shown that pseudo- allergen free diet can benefit up to 31-70% of patients suffering from CSU.[22,23] Similar results were seen with low histamine diet; wherein patients suffering from CSU along with gastrointestinal symptoms benefited from low histamine diet, had better quality of life and concurrently had a reduction in antihistamine intake.[24]

Infections (viral, bacterial, parasitic) have been commonly associated with acute spontaneous urticaria especially in children. Episodes of infections can also lead to CSU. Viral etiologies include adenovirus, rotavirus, enterovirus and others.[12,25,26] Herpes virus has also been implicated in the causation of CSU, more so in the adults. Studies have shown that a course of antiviral therapy have led to the remission of CSU in such cases.[27]

Similarly, in adults, a co-relation between episodes of acute and chronic urticaria and viral hepatitis has been confirmed.[28,29]

Studies have also shown higher prevalence of nasal carriage of Staphylococcus aureus in patients suffering from chronic urticaria. In few cases, a proper antibiotic therapy has led to complete remission of chronic urticaria while in few only partial resolution of symptoms could be achieved with antibiotic therapy.[28,30]

Amongst bacterial infections, Helicobacter pylori infection is most commonly associated with chronic urticaria.[28,31] H. pylori stimulates antibody production and reduces immunological intolerance, thereby playing an etiological role in the pathogenesis of chronic urticaria.[32]

In the recent decades, quality of life (QoL) has become an important subject both for the society and the health professionals. It is defined as an individual's happiness or satisfaction in the domains of life that he/ she considers important. Several factors such as health, finances, work, affect an individual's overall well- being. Therefore, the term "Health related quality of life" (HRQoL) was developed to determine the impact of disease and therapy on an individual's life according to his/ her perception. Hence, it is a subjective measure of the effect of a disease on a patient's quality of life.[33]

In the ever- changing medical era, increasing importance is being given to the patient's perception of the disease and his/ her decision making into the handling of the disease so as to improve the overall QoL. Since the clinical parameters did not take into account the individual's perceptions, scientific community is now much more interested in the HRQoL field.[34]

Chronic urticaria not only interferes with the subjective well- being and quality of life of an individual, it also causes inconvenience at work place, school, family and negatively impacts leisure activities. In some instances the health status of the patient suffering from chronic urticaria is comparable to that of patients suffering from coronary artery disease and bronchial asthma.[35,36]

Short form- 36 health survey (SF36) is a health status measure. It comprises 8 domains related to activities of daily life i.e, role limitations due to emotional problems, role limitations due to physical problems, physical functioning, social functioning, vitality, body pain, general health perception and mental health. Each of these domains range from 0 (the lowest level of functioning) to 100 (the highest level of functioning).[36,37]

Another instrument is Satisfaction Profile (SAT-P). It can be considered as an indicator of subjective QoL as it provides a satisfaction profile of daily life. The time scale used is the previous 1 month. The individual evaluates his/ her satisfaction in 32 life domains based on a 10cm long horizontal VAS. Each aspect ranges from 0 (the lowest satisfaction score) to 100 (the highest satisfaction score).[36,38]

Chronic urticaria quality of life questionnaire (CU-$Q_2$oL) was developed to determine the quality of life specifically in patients with chronic urticaria as the earlier available tools were not disease specific but could be used to compare the quality of life in different diseases ranging from cancers to eczema. It consists of 6 main domains, i.e, Pruritus, Swelling, Impact on life activities, Sleep problems, Looks and Limits, which are further subcategorized giving a total of 23 items (selected specifically keeping in mind the problems of patients suffering from chronic urticaria). Its use has been validated in the assessment of HRQoL of patients suffering from chronic urticaria, its management and the effectiveness of the treatment options.[39]

To measure the urticaria activity in CSU, Urticaria activity score (UAS) has been validated. It is used for 7 consecutive days. It assesses two main parameters of urticaria signs and symptoms - weals and itch. When it is used once daily for 7 days, it is called UAS7 and when it is used twice daily for 7 days, it is called $UAS7_{TD}$.[40]

Another widely accepted tool is Dermatology Life Quality Index. It is a questionnaire consisting of 10 questions. It is used to determine the QoL in various dermatological conditions including urticaria.[41]

# AIMS AND OBJECTIVES

To study the quality of life in patients suffering from Chronic Urticaria.

# REVIEW OF LITERATURE

Dermatological diseases are considered as the fourth leading cause of the world's non-fatal burden and is expressed as years lost due to disability. They are the 18th leading cause of world's health burden that is expressed as disability-adjusted life years (DALYs). Although dermatological diseases are non- fatal, they have an impact on the health-related quality of life (HRQoL) and daily activities of patients, which have a substantial impact on the society as indirect costs.[42]

Urticaria is characterized by the presence of erythematous, edematous and pruritic weals, angioedema or both. The weals denote edema of the dermis. Angioedema on the other hand is deep dermal, subcutaneous or submucous edema which is rather painful than itchy. It is usually ill defined and can occur anywhere on the body. The characteristic feature of urticaria is that the lesions (i.e weals) usually disappear in 24 hours.[2,3]

It is classified into acute urticaria and chronic urticaria. When the symptom duration is less than 6 weeks, it is called acute urticaria while if it lasts greater than 6 weeks, it is called chronic urticaria. The intermittent and the episodic presentations are included in the definition of chronic urticaria.[2,3]

Chronic urticaria is further classified into Chronic idiopathic/ spontaneous urticaria and Chronic inducible/ physical urticaria.[3] Chronic spontaneous urticaria (CSU) is the most common type, accounting for about two- third of all the chronic urticaria cases and no cause has been determined for it.[4, 5] In chronic inducible urticaria, symptoms are caused by external factors such as cold, heat, pressure, vibration or water, etc.[4]

Chronic urticaria affects approximately 0.5-1% of the general population worldwide [34,43] while the prevalence of acute urticaria worldwide is approximately 10-20%.[43] The prevalence of chronic urticaria in Nepal is estimated to be 2.4%, in Korea 3.08% and in Taiwan 0.79%.[44-46]

Prevalence of chronic urticaria is seen to be twice as more in females than in males.[4] Chronic urticaria is more common in adults, although children also suffer from it. A Korea based study showed that the prevalence of chronic urticaria in children is approximately 1.8%.[8,47] Prevalence of chronic urticaria associated with autoimmunity is similar in both children and adults.[8,48,49,50] 30-50 years is the most commonly affected age group in chronic urticaria.[4]

**Etiology of CSU**

Various components have been implicated in the causation of CSU. These include:[51]

1. Infections: Viral, bacterial, fungal and parasitic infections have been found to be associated with the causation of CSU. One such example includes occurrence of recurrent spontaneous urticaria in Mediterranian population due to a sea fish nematode- *Anisakis simplex*.[52]

   Helicobacter pylori has also been vastly associated with occurrence of CSU. It has been shown that mast cell degranulation is caused by a protein component of the bacteria leading to CSU.[53] There are studies that claim that CSU can improve with the eradication of H. pylori.[26,54,55] Final verdict in this regard is still unclear; as some studies show an association between H. pylori and CSU while others do not.[56-58]

2. Food: IgE mediated hypersensitivity is rarely a cause of chronic urticaria, although few patients associate symptom onset with the intake of certain food items and food additives.[7] Positive prick test to food allergens such as potato, hazelnut, beef, pork, and seafood has been found in approximately 20% of the patients presenting with CSU.[59-61]

Pseudoallergens such as food additives and spices, as a cause of chronic urticaria is still unclear as a few studies have found an association between them while others have not.[22,23,54,62]

3. Drugs: Non- steroidal anti- inflammatory drugs (NSAIDs) and Angiotensin converting enzyme (ACE) inhibitors are the categories of drugs most commonly associated with chronic urticaria.[63-66] ACE inhibitors can cause both angioedema and urticaria and non-immunologic accumulation of bradykinin and other neutrokines is implicated in its pathogenesis. Therefore, along with the standard therapy for chronic urticaria, bradykinin antagonist icatibant can also be used as it leads to faster resolution of symptoms in patients with urticaria or angioedema due to ACE inhibitors.[67,68]

NSAIDs can cause various cutaneous manifestations which are described as follows:[69,70,71]

i. NSAID exacerbated cutaneous disease (NECD): It occurs in a patient already suffering from CSU. There is exacerbation of weals/ angioedema within minutes to 4 hours after exposure to NSAIDs. Increased levels of leukotrienes and prostaglandin D2 (PGD2) have been implicated in its pathogenesis.
ii. NSAID induced urticaria/ angioedema (NIUA): It develops in healthy individuals i.e., patient with no previous history of urticaria/ angioedema. There is development of weals/ angioedema within 1-6 hours after exposure to NSAID. It occurs as a result of cyclooxygenase (COX) - 1 inhibition.
iii. Immediate hypersensitivity to aspirin or single NSAID: It also develops in healthy individuals i.e., patient with no previous history of urticaria/ angioedema. Urticaria/ angioedema/ anaphylaxis occurs within minutes to 1 hour after exposure to NSAID. It is an IgE mediated hypersensitivity reaction.

4. Emotional stress: Anxiety, depression and other somatoform disorders have been seen in patients suffering from chronic urticaria. The subject of whether this emotional stress is the cause or the consequence of chronic urticaria is unclear.[6,72]
5. Autoimmune: When urticaria occurs due to autoimmune causes, it is referred to as chronic autoimmune urticaria/ antibody associated urticaria. Positive response to one's own serum is called positive autologous serum skin test (ASST) and it is seen in nearly one third to half of the patients suffering from CSU.[73] Two types of antibodies- IgG antibodies to IgE receptor FcεRIα and IgG antibodies to IgE have been documented.[54,74-77] Increased risk of various autoimmune disorders like thyroid disorders particularly hypothyroidism, diabetes mellitus-II, rheumatoid arthritis and systemic lupus erythematosus have been seen.[73]

But in a vast majority of patients, no cause can be determined even after undertaking extensive investigations and therefore the term Chronic idiopathic urticaria.[2]

**Epidemiology of chronic inducible urticaria:**

In chronic inducible urticaria, signs and symptoms develop due to specific environmental/ physical stimuli. The same patient may suffer from multiple types of chronic inducible urticaria.[78] It accounts for 20-30% of all cases of chronic urticaria and is associated with CSU in up to 14- 36% of cases.[79,80] Among chronic inducible urticaria, the most common subtype is Symptomatic dermographism accounting for approximately 40-73% of the cases. Vibratory angioedema, solar urticaria and heat urticaria are rare.[54,78,80] The estimated prevalence of chronic inducible urticaria is 0.5%.[81]

## Pathophysiology of Urticaria

Activation of mast cells leads to the formation of weals. Mast cells are large cells that stain metachromatically with toluidine blue stain. It has intracytoplasmic granules which contain preformed vasoactive mediators such as histamine. Mast cells are present around the blood vessels in the dermis and the mucosa. Mast cell's primary physiological function is to establish a first line epithelial defense mechanism against parasites and micro- organisms. Activation of mast cells leads to vasodilatation and vaso-permeation which results in dermal edema and the recruitment of cellular and humoral cell effectors.[9,82]

Mast cells can be activated by immunological and non- immunological stimuli. This results in:[9,83, 84]

i. Degranulation of mast cells causing immediate phase reaction and resulting in edema
ii. Release of cytokines and chemokines which cause late phase reaction resulting in leucocyte infiltration
iii. Release of prostaglandins and leukotrienes which lead to intermediate phase reaction resulting in inflammation

Though not clearly demonstrated, it has been hypothesized that mast cells in the patients with chronic urticaria are fragile as compared to healthy individuals. Therefore, the mast cells in patients with urticaria are more sensitive to activation signals. Recent studies have shown that basophils in patients with chronic urticaria have abnormal regulation of activation signaling pathways. This concept is called mast cell- basophil releasability.[9,85]

Most of our knowledge regarding mast cell activation comes from the studies conducted on IgE receptor mediated anaphylaxis. IgE crosslinking of the allergen is responsible for induction of the reaction. FcεRI binds the IgE and comprises of 4 subunits- $\alpha$ chain, β chain and a dimer of $\gamma$ chain.

Ultimately, the intracellular pathways- spleen tyrosine kinase (*syk)* and *lyn* are activated which cause mast cell degranulation.[9,86]

**Mediators involved in the development of urticaria lesions:**

Once the mast cell is activated, there can be 3 main consequences:[9]

1. Degranulation: Mediators such as histamine, serotonin, tumor necrosis factor-α (TNF-α), proteases and proteoglycans are released immediately within a few minutes which cause vasodilatation and recruit plasma into the dermis.[9]
2. Cytokine and chemokine synthesis: Within 6-24 hours of activation, mast cells produce various cytokines and chemokines including interleukin 6 (IL-6), TNF-α. These are acute phase inflammatory cytokines which cause activation of the endothelium which further leads to recruitment of leucocytes and the production of inflammatory cytokines by other cell types. Other cytokines and chemokines produced are- IL- 3, 4, 5, 6, 8, 9, 13, transforming growth factor β (TGF-β), granulocyte- macrophage colony stimulating factor, stem cell factor, monocyte chemoattractant protein- 1. All these are responsible for the chemotaction of leucocytes into the dermis, especially the eosinophils. These leucocytes are further responsible for the late phase reaction, i.e., maintenance of the skin inflammation which as clinically seen as indurated erythema.[9,87]

   Recently it has been shown that T cells are responsible for the chronicity of the urticarial weals. This is because the mast cells can behave like antigen presenting cells (APC) which recruit T cells into the dermis.[88] This may be the reason why cyclosporine is effective in anti- histamine-1 (H-1) drug resistant urticaria.[89]

3. Leukotrienes and prostaglandin synthesis: Leukotrienes and prostaglandins are formed from their precursor arachidonic acid by two enzymatic systems respectively- lipoxygenases and cyclo-

oxygenases. These are formed within hours of activation of mast cells. Leukotriene B4 (LTB4) has a chemotactic activity and it recruits leucocytes into the skin.[9,90] In some patients it has been demonstrated that these mediators are responsible for the chronicity of the urticarial lesions. Therefore, they benefit from leukotriene inhibitors or NSAIDs.[91]

Depending on the stimulus, mast cell activation can either lead to all of the above three consequences or a part of them. This shows that cytokine production is possible without mast cell degranulation.[92] Thus, urticaria may not only be limited to histamine release or mast cell degranulation and there are several situations that support this hypothesis:[9]

a) Urticaria occurring due to high levels of IL-6 is resistant to anti H-1 therapy.[93]
b) Some patients show improvement with only NSAIDs or leukotriene inhibitors with anti H-1 therapy and not to anti H-1 therapy alone.[94]
c) Few others only respond to agents that suppress cytokine formation like cyclosporine.[89]

Similarly in chronic inducible urticaria, Type I autoimmunity is thought to play a major role. It hypothesizes that mast cells and basophils are activated by the binding of an autoantigen to the IgE.[77,95] These autoallergens are synthesized *de novo* by specific environmental factors. When these autoallergens bind to IgE bound to FcεRI on skin mast cells, they undergo degranulation.[77,95-97] This concept is supported by the presence of increased levels of IgE in patients with chronic inducible urticaria.[96]

Furthermore, the disease can be passively transferred by the transfer of the sera suggesting that IgE is the transfer factor.[98,99] A study showed that patients suffering from cold urticaria could be desensitized by the depletion of cold dependent skin antigen that binds to IgE bound to FcεRI of skin mast

cells thereby activating them.[100] This may be the reason that anti- IgE therapy is effective in chronic inducible urticaria.[101-103]

**Types of Chronic Inducible Urticaria (CIndU)**

CIndU is a subset of chronic urticaria which is defined as the development of recurrent pruritic weals or angioedema or both on exposure to a specific stimulus. For better understanding, CIndU is further categorized into physical and non- physical urticaria. Physical urticaria include:[95]

i. Heat urticaria
ii. Cold urticaria
iii. Symptomatic dermographism
iv. Delayed pressure urticaria
v. Vibratory angioedema
vi. Solar urticaria

While non- physical urticaria include:[95]

i. Aquagenic urticaria
ii. Contact urticaria
iii. Cholinergic urticaria

The weals usually last from minutes to hours except for delayed pressure urticaria where the weals can last for as long as 48 hours.[95, 8] Additionally, patients may experience systemic symptoms on excessive exposure to a particular stimuli. For example, anaphylaxis occurring in cholinergic and cold urticaria on excessive exposure to exercise and cold respectively.[95,104-106]

1. **Symptomatic Dermographism:**

Also referred to as urticaria factitia or dermographic urticaria, it is the most common type of physical urticaria. On rubbing/ scratching/ scrubbing, there is development of weals which is accompanied with itching and/ or burning sensation of the skin. It needs to be differentiated from simple

dermographism where weals develop on skin stroking but they are not accompanied with itching or burning sensation of the skin.[95]

Symptomatic dermographism is often associated with CSU. Symptomatic dermographism was found to affect 25% of patients suffering from CSU in a study of 245 patients.[79]

In another study conducted on 150 patients suffering from symptomatic dermographism, symptom severity was mild in 17%, moderate in 45%, severe in 33% and very severe in 6% of patients.[107] In a study of 27 patients suffering from symptomatic dermographism, Wallengren J. *et al* found that the QoL was impaired in 43% of patients.[108]

A thorough history is important to establish the diagnosis of symptomatic dermographism. Patients usually report a skin crawling sensation which leads to scratching. Also patients who complain of pruritus without any visible skin lesion or when weals are linear in distribution and disappear in a few minutes, should be evaluated for symptomatic dermographism.[95]

To confirm the diagnosis, a provocation test has to be done. For this, we can use a wooden tongue blade and stroke the skin firmly. Alternatively, a calibrated dermographometer can be used. Because of its defined pressure settings, it provides a more uniform testing. The skin site should not be infected or have any inflammatory change. If a weal is present without any itching, it is called simple dermographism while if a pruritic weal appears within 10 minutes of stroking the skin, it confirms the diagnosis of symptomatic dermographism.[95]

Patient should be advised to avoid triggers. A non- sedating second generation H 1 antihistamine should be used daily to improve the QoL. Patients not responding to the standard dose, can be given a dose of up to 4 times the standard dose.[109-112] For antihistamine resistant cases, monoclonal antibody to IgE- omalizumab [113,114] and T cell inhibitor-

cyclosporine [95] can be used. Other form of therapies include, phototherapy and photochemotherapy.[115-117]

**2. Cold Urticaria:**

Cold urticaria is defined as the appearance of weals or angioedema on exposure to cold or on rewarming the skin/ mucosa. The weals usually resolve within an hour.[78,118,119] It is the second most common form of physical urticaria with an estimated prevalence of 0.05%.[120] It usually develops in young adults with a slightly higher female preponderance.[121] Weals/ angioedema occur within minutes after contact of skin or mucosa with cold air, liquids or solids.[122-124] In some cases systemic involvement can occur in the form of anaphylaxis.[125]

Types of cold urticaria:[95]

1) Acquired cold urticaria
    i. Primary cold urticaria
    ii. Secondary cold urticaria
        a. Cryoglobulinemia
        b. Leukocytoclastic vasculitis
        c. Infectious diseases
2) Atypical acquired cold urticaria
    i. Systemic atypical acquired cold urticaria
    ii. Cold dependent dermographism
    iii. Delayed cold urticaria
    iv. Cold induced cholinergic urticaria
    v. Localized cold reflex urticaria
3) Hereditary cold urticaria syndromes
    i. Familial cold auto- inflammatory syndrome
    ii. Phospholipase C-γ2- associated deficiency and immune dysregulation

Among these, primary acquired cold urticaria is the most common subtype of cold urticaria. Secondary acquired cold urticaria is rare and it is usually

associated with an underlying disease such as vasculitis, infections, drug induced and most commonly-cryoglobulinemia. Both primary and secondary acquired cold urticaria give a positive test with cold provocation test while all the other subtypes give an immediate negative test on cold provocation.[95]

Cold provocation test is carried out on the volar aspect of the forearm by applying a cold stimulus. It includes the application of either ice cube or cool packs or cold water baths.[78,95] One should be cautious while using cool packs or cold water baths for testing as it can lead to systemic reactions. Therefore these are best avoided.[95] When using an ice cube, it should be covered in a thin plastic bag and some amount of water should be added to avoid damage to the skin. Direct water contact is also prevented as it induce aquagenic urticaria and give a false positive result with cold provocation test.[95]

The test is performed for 5 minutes in most cases. The duration can be shortened or lengthened according to the case scenario; for example, in patients who are extremely sensitive, the test can be carried out for 30 seconds while in patients who have a positive history but no weal formation is seen after standard testing time, it can be lengthened to up to 20 minutes.[78,106,126] The test site should be checked 10 minutes after the test. The presence of a palpable weal and flare type reaction associated with itching or burning sensation means a positive test.[95]

Patients with positive test result should undergo threshold testing. It is used to determine the stimulation time threshold (defined as the shortest duration of cold exposure that is sufficient to induce a positive test reaction) and the temperature threshold (defined as the highest temperature that can induce a positive reaction). Stimulation time threshold is determined by reducing in 1 minute decrements the time of cold application. This can be carried out by using ice cube or TempTest. If the time is <3 minutes, it indicates higher disease activity.[106]

The temperature threshold is determined by TempTest. It is a Peltier element- based provocation device. The TempTest 4.0 model (Courage & Khazaka, Cologne, Germany) has a single Peltier element of length 350 mm and width 2 mm. It provides a continuous temperature gradient from 4 to 44 degree Celsius along its length. It is advantageous over other methods as it can produce standardized results which can be reproduced.[127,128] Measurement of temperature threshold is useful both for assessing disease activity and severity and to determine the efficacy of the treatment therapy.[129]

The patients are instructed to avoid prolonged contact with objects having temperature below their temperature threshold.[78] Non- sedating H- 1 antihistamines remain the first line of treatment. Patients usually respond to standard daily dosing.[110,130,131] Some patients might not respond to the standard dose. In such cases higher doses of H- 1 antihistamines should be tried.[132-136] In antihistamine resistant cold urticaria, omalizumab,[114,137-139] cold desensitization[97,140,141] and antibiotic therapy[120] can be used. Desensitization is a means to protect from symptom development on exposure to cold by repeated cold exposure. This treatment should however be undertaken under expert supervision as it can lead to severe systemic reactions like anaphylaxis.[97] To maintain the tolerance, if achieved, daily cold showers are required, the compliance of which is poor.[142] In few selected cases, IL-1 inhibitor- anakinra and TNF inhibitor- etanarcept have shown good response.[143,144] Recently, an IL-5 antibody Reslizumab has shown good results in CSU as well as cold urticaria.[145]

3. **Heat Urticaria**:

Also referred to as heat contact urticaria, it is defined as the appearance of weals within few minutes of contact heating of the skin.[146, 147] Provocation testing is performed on the volar surface of the forearm by applying a hot stimulus. Various methods such as metal or glass cylinders filled with hot water, hot water baths and TempTest can be used. The stimulus, i.e. heat

is applied for 5 minutes at temperature up to 44 degree Celsius. In some patients, the duration of contact and temperature have to be adjusted. The test site is examined 10 minutes after the contact. If the site shows a palpable weal with flare, it is said to be positive. In most cases, itching or burning sensation may also be present. In patients who have a positive test reaction, stimulation time and temperature threshold should be determined to assess the disease activity and the response to treatment therapy.[78]

Non- sedating antihistamines remain the mainstay of treatment. They can be used alone or in combination with H2 blockers.[148,149] In some cases omalizumab has been proven useful.[150]

**4. Solar Urticaria:**

Solar urticaria is characterized by the appearance of weals within minutes on exposure to sunlight. A thorough history is important to diagnose a case of solar urticaria. Provocation test is performed to confirm the diagnosis. For this, exposure to both ultraviolet (UV) radiation and visible light has to be undertaken. Patient should be instructed to avoid sunscreen and photoactive medications before coming in for a phototest. Monochromator (UV-A and UV-B, visible light) or solar stimulator with filters (UV-A and UV-B) can be used as sources for phototesting. It is carried out on buttocks separately for UV-A, broadband UV-B spectrum and visible light spectra. UV-A is tested at 6 J/cm$^2$ and UV-B at 60 J/cm$^2$. If a palpable weal with flare develops at the exposed site within 10 minutes of exposure, it is considered a positive test reaction. It may be accompanied with an itchy or burning sensation in some patients. In patients with positive test result, threshold testing (defined as the minimal urticarial dose of an appropriate wavelength radiation) should be carried out. This is helpful in determining the disease activity and the response to treatment therapy.[78]

Patients suffering from solar urticaria should be advised to avoid the sun as far as possible, to use sunscreens with high sun protection factor (SPF) and to wear protective clothing.[78] Patients are treated with non- sedating H1

antihistamines.[151] Desensitization can be done to build tolerance to UV light.[152,153] In a few patients, omalizumab,[114,154,155] intravenous immunoglobulin [156] and cyclosporine [157] have been shown to be effective while in others no effectivity has been proved.[158- 160] Alpha MSH analogue and melanocortin receptor agonist- Afamelanotide has been shown to be effective in preventing signs and symptoms in patients suffering from solar urticaria.[161]

**5. Cholinergic Urticaria:**

Cholinergic urticaria is characterized by the appearance of small weals or redness or a pruritic sensation or angioedema on exercising or on passive warming (example- hot bath). In some patients, emotional stress, hot and spicy beverage or food can also trigger the symptoms. The weals are usually accompanied with a flare reaction and are mostly seen on the trunk and limbs.[78,162-165] These lesions last for 15- 60 minutes approximately.[78] It has to be differentiated from exercise induced anaphylaxis which occurs after physical activity only.[162] The symptoms start with distal pruritus which is followed by flushing and an urticarial rash. The weals in exercise induced anaphylaxis are comparatively larger.[78]

Provocation test is done to confirm the diagnosis of cholinergic urticaria. Before starting the test, patient's skin should be examined thoroughly. Any acne or papules should be marked with pen to avoid any confusion later on. Moderate physical exercise which is appropriate for the patient's age and general condition should be selected. Exercise should be continued to the point the patient starts sweating or up to 15 minutes beyond the onset of the symptoms. If the patient develops weals over 10 minutes, the test is considered to be positive.[78]

A passive warming test is carried out in patients with positive exercise provocation test. This is carried out at least 24 hours later. A full bath at 42 degree Celsius for 15 minutes is used. The body temperature should rise

by 1 degree Celsius. It is carried out to rule out exercise induced anaphylaxis.[78]

Patients are advised to avoid overheating. Non- sedating H1 antihistamines is the first line of treatment in symptomatic patients.[167] Patients not responding to standard dose of antihistamines, can be given a higher dose.[168] Other treatment modalities that can be used are omalizumab,[169] scopolamine butylbromide,[170] combinations of propranolol, antihistamines and montelukast,[171] and botulinum toxin injections.[172] Desensitization with the help of regular physical exercise or with autologous sweat have been described.[78,173,174]

**6. Delayed Pressure Urticaria:**

Delayed pressure urticaria is characterized by the appearance of skin swelling on application of sustained pressure to the skin.[175,176] The swelling appears between 30 minutes to 12 hours of application of pressure and can last up to 72 hours. Various test methods can be used to diagnose a case of delayed pressure urticaria. These include suspending weights (7 kg on a 3 cm shoulder strap) from the shoulders, application of rods supported in a frame which can be lowered vertically on the back, thighs, forearm and dermographometer. Testing site should be examined approximately 6 hours after the end of the provocation test. Testing duration can vary from 70 seconds to 20 minutes. The test is considered positive if there is development of an erythematous swelling. It is not usually pruritic but has a burning/ painful sensation. The closest differential is symptomatic dermographism but it is an immediate reaction as compared to pressure urticaria which is delayed.[78] In case of positive test result, threshold testing has to be performed to assess the disease activity and response to treatment therapy.[78]

Patients with delayed pressure urticaria are advised to avoid static pressure, for example- to avoid tight clothing. First line of therapy is non-sedating H1 antihistamines. Patients who do not respond to the standard

dosing regimen, should be given higher doses of H1 antihistamines to mitigate the symptoms.[78] Other treatment options include a combination of antihistamines and montelukast,[177,178] omalizumab,[114,179] dapsone,[180] sulfasalazine[181] and theophylline.[182]

**7. Vibratory Angioedema:**

Vibratory angioedema is characterized by the development of itching and swelling within minutes on exposure to vibration.[183,184] It can be diagnosed with the help of a laboratory vortex mixer. For this, the forearm is held on a flat plate of the vortex mixer which runs between 780 rpm [183] to 1380 rpm [185] for 5 minutes. The site is checked after 10 minutes. The circumference of the arm at three sites- wrist, mid- forearm and elbow should be checked before and after the test to determine the vibration induced swelling. The test is considered positive, if a swelling appears.[78]

Patients are advised to avoid any vibratory stimulus. H1 antihistamines remain the mainstay of treatment.[78]

**8. Aquagenic Urticaria:**

Aquagenic urticaria is characterized by the appearance of weals (mostly 1-2 mm in size) on exposure to water, regardless of its temperature. Patient develops weals within 30 minutes of contact with water.[78] It has been implicated that water acts as a carrier for an epidermal antigen which plays a role in the patho- mechanism of Aquagenic urticaria.[186]

Provocation testing is done to establish the diagnosis of Aquagenic urticaria. For this a towel soaked in water at the temperature of 35-37 degree Celsius or in physiological saline is placed on patient's trunk. The test is carried out for 40 minutes. Duration can be shortened if the patient complains of pruritus or weals are seen. The test is considered positive if weals are seen within 10 minutes after taking off the towel.[78]

H1 antihistamines are effective in alleviating the symptoms.[187,188] Some studies have shown UV therapy to be effective.[189]

### 9. Contact Urticaria:

It is defined as the development of weals on contact with an exogenous agent. The weals usually develop within 30 minutes of exposure.[78] Based on the mechanism involved, it can be classified into immunologic contact urticaria (ICU), non-immunologic contact urticaria (NICU) and indeterminate contact urticaria if the mechanism is unclear.[78] ICU is an IgE mediated reaction to agents such as proteins. Therefore, the reaction is not limited to the site of contact, but can spread beyond the area of contact into generalized urticaria or can even produce systemic symptoms.[190,191] ICU can be triggered by latex, plants, animals, cosmetics, chemicals, drugs or even food items.[78,192] On the other hand, NICU lesions are limited to the area of contact. NICU can occur on exposure to plants such as stinging nettle, animals such as jelly fish or chemicals.[78,193-196]

Along with a thorough history, provocation test is performed to confirm contact urticaria. For this skin prick test, open controlled application testing, or closed patch tests can be used for 20 minutes. Test is not necessary when the triggering agent is obvious, for example, jellyfish. For the diagnosis of ICU, specific IgE should be determined.[78]

Patient is advised to avoid the triggering agent. H1 antihistamines help to alleviate the symptoms.[78] In case ICU is occurring due to an occupational agent, measures should be taken to eliminate the agent from the working environment.[197]

## DIAGNOSIS OF CSU:

According to the 2018 European Academy of Allergy and Clinical Immunology (EAACI)/Global Allergy and Asthma European Network ($GA^2LEN$)/European Dermatology Forum (EDF)/World Allergy Organization (WAO) guidelines given by Zuberbier T. *et al*, work up for CSU is done for 3 main reasons:[112]

i. To exclude other differential diagnoses
ii. To identify triggers of exacerbation or any underlying cause

iii. To assess disease activity, impact and control with therapy

Weals and angioedema are not limited to urticaria, but can also be found in other conditions. In patients who present with weals without angioedema, urticarial vasculitis and auto- inflammatory syndromes have to be ruled out. Whereas in patients presenting with only angioedema and no weals, hereditary angioedema and ACE inhibitor induced angioedema should be ruled out.[112]

A thorough history is essential as it helps in the determination of the triggering factors. In past, many advances have been made to determine the underlying cause in CSU.[77] History should include:[112]

a. The duration of the weals/ angioedema
b. Frequency
c. Similar family history
d. History of autoimmune disorders
e. History of medication
f. History of infections
g. History of intake of specific food items
h. Induction by physical agents or exercise
i. Occupational history
j. Associated angioedema
k. Associated symptoms such as joint pain, fever
l. Previous treatment taken for the same and the response to it.

Next, the patient should undergo a proper physical examination.[112] According to EAACI/ GA$^2$LEN/ EDF/ WAO and Joint Task Force on Practice Parameters international guidelines, testing should be undertaken according to the history. Specific provocation tests should be chosen to elicit the specific subtypes of CIndU.[51,112] In CSU, diet, intake of NSAIDs or ACE inhibitors, infections are implicated to be the underlying cause. Malignancies can also be an underlying cause for CSU but routine screening for malignancies is not suggested. It should be done when there

are subtle clues pointing towards a malignancy such as sudden weight loss. To screen for autoantibodies against IgE and FcεRI, two tests are available- Autologous serum skin test (ASST) and basophil activation tests (BATs).[112] ASST is a non- specific screening test which helps in determining the presence of serum histamine- releasing factors of any type.[75, 112] BATs on the other hand, helps to determine histamine release or upregulation of activation markers of donor basophils in response to stimulation with serum from patients suffering with CSU. It can help to assess disease activity[198,199] as well as to diagnose autoimmune urticaria.[200] It is also used as a marker to assess response to treatment therapy with omalizumab[201] and cyclosporine.[202]

In few patients suffering from CSU, blood basopenia has been detected. Blood basophils are detected in the skin lesions of patients suffering from CSU.[112,203] When CSU is in remission, an increase in blood basophils is seen.[204] This is also observed with anti IgE treatment.[205] Similarly it has been detected that D- dimer levels are high in patients suffering from CSU and these levels decrease on treatment with omalizumab.[206,207]

C- reactive protein (CRP), complete hemogram with differential leucocyte count and erythrocyte sedimentation rate (ESR) tests can be used for screening purposes.[112,208-210] A high eosinophil count could suggest atopy or a parasitic infestation. Elevated CRP, ESR suggest an underlying inflammatory/ infectious/ autoimmune disorder.[3,211]

**TREATMENT OF CHRONIC URTICARIA:**

According to EAACI/ GA$^2$LEN/ EDF/ WAO guidelines of 2018, the therapeutic approach towards urticaria involves three key aspects:[112]

i. Identification and elimination of any underlying disease factor. Example- drugs, infections, food items etc.
ii. Avoidance of eliciting factor if recognized. Example- pressure, heat, cold etc., or inducing tolerance to the physical agent.

iii. Prevention of mast cell mediator release and/ or effects of mast cell mediators by the use of pharmacological drugs.

**Pharmacological treatment:**

Its basic aim is to provide complete relief from the symptoms. Pharmacotherapy should be used as much as needed and as little as possible. Therefore, throughout the course of the disease, the selection of medication may change. In urticaria, the main target is to reduce the effect of the mast cell mediators such as histamine on the target organs. Urticaria symptoms are mediated by the action of histamine on H1 receptors of endothelial cells resulting in weals and on sensory nerves resulting in flare and pruritus.[112] H1 antihistamines should be used continuously[212,213] and this is advocated by the mechanism of action of H1 antihistamines on H1 receptors as inverse agonist, i.e. it preferentially acts on the inactive H1 receptors. It stabilizes them in inactive configuration, shifting the equilibrium to inactive state.[112]

Other mast cell mediators such as leukotrienes, cytokines and inflammatory infiltrate of basophils, eosinophils playing a role in urticaria, may be refractory to H1 antihistamines and may only respond to short course of corticosteroids.[112,214] These general recommendations apply to all forms of urticarias. In CIndU, on demand therapy is more useful than continuous therapy.[112]

First generation antihistamines have profound anticholinergic effects, drug interactions including alcohol, hypnotics, analgesics and also have a sedative effect on the central nervous system (CNS). They impact learning and performance of complex sensorimotor tasks. According to a GA$^2$LEN position paper on antihistamines and WHO guidelines on Allergic Rhinitis and its impact on Asthma (ARIA), first generation antihistamines are no longer recommended in treatment of urticaria and allergy both in children and adults.[215,216]

Second generation antihistamines are minimally or non- sedating and are relatively free of anticholinergic effects. Among these, astemizole and terfenadine were cardiotoxic and so are no longer recommended to be used.[112] According to EAACI/ GA$^2$LEN/ EDF/ WAO guidelines of 2018, modern second generation antihistamines should be considered the first line of treatment in symptomatic patients as they have a good safety profile.[112] Few patients do not respond to the standard doses of second generation antihistamines. In these patients, second generation antihistamines can be given at a dose up to fourfold higher than the standard dosing regimens. This has been supported by various studies.[133,134,136,168,217] Therefore, second generation antihistamines in the standard dose are considered as the first line therapy in urticaria while at higher doses are considered the second line of treatment in urticaria.[112]

Monoclonal antibody against IgE- omalizumab has been shown to be safe and effective in the treatment of CSU. It is also effective in CIndU-symptomatic dermographism[113], cold urticaria[137,139], heat urticaria[150], solar urticaria[154,155], cholinergic urticaria[169] and delayed pressure urticaria[179] In CSU, omalizumab prevents angioedema development,[218] thus improving the quality of life significantly.[219] It is also suitable for long term treatment.[220] It is also effective if the patient relapses after discontinuation of omalizumab.[221] The recommended dose of omalizumab in CSU is 300mg every 28 days.[112] EAACI/ GA$^2$LEN/ EDF/ WAO guidelines of 2018 recommend to add omalizumab in patients not responding to second generation H1 antihistamines.[112]

Cyclosporine though has a moderate effect on mast cell mediator release[222] and has been shown to be effective in combination with second generation H1 antihistamines in placebo controlled trials and open controlled trials in CSU, is not recommended as a standard treatment because of its adverse effect profile.[112,223] It is only recommended for

severe disease refractory to any dose of antihistamine and omalizumab combination.[112]

Some randomized controlled trials, have assessed the role of leukotriene receptor antagonists in patients with chronic urticaria. The level of evidence supporting their use in chronic urticaria is low, but EAACI/ GA$^2$LEN/ EDF/ WAO guidelines of 2018 recommends montelukast's use as an add- on treatment with second generation H1 antihistamines in chronic urticaria in patients not responding to second generation H1 antihistamines alone.

Systemic corticosteroids are generally not recommended for use in chronic urticaria. But a short course of systemic steroids (up to 10 days) can be given in acute urticaria and in acute exacerbation of chronic urticaria. EAACI/ GA$^2$LEN/ EDF/ WAO guidelines of 2018 recommends against the long term use of systemic steroids.[112]

Algorithm for the treatment of chronic urticaria according to the EAACI/ GA$^2$LEN/ EDF/ WAO guidelines of 2018:[112]

1. Second generation H1 antihistamine. If the control achieved is unsatisfactory after 2-4 weeks, then
2. Increase the dose of second generation H1 antihistamines up to four times. If the control achieved is unsatisfactory after 2-4 weeks, then
3. Add omalizumab with second generation H1 antihistamines. If the control is inadequate within 6 months, then
4. Add cyclosporine on to second generation H1 antihistamines.

Other treatment modalities include- H2 antagonists, dapsone, methotrexate, sulfasalazine, interferon, plasmapheresis, intravenous immunoglobulin, phototherapy, hydroxychloroquine, tranexemic acid and mycophenolate mofetil, doxepin. These have low quality evidence and can be used in appropriate clinical context.[112, 224]

Newer treatment modalities for chronic urticaria include:[225]

i. IL-5 targeted monoclonal antibodies- Mepolizumab, Reslizumab, and Benralizumab.
ii. Anti- IL- 4/13 monoclonal antibody- Dupilumab
iii. Tranexamic acid
iv. TNF-$\alpha$ inhibitors- Adalimumab, Etanercept, and Infliximab
v. Anti- CD 20 antibody- Rituximab
vi. IL-1 targeting biologics- Anakinra, Canakinumab, and Rilonacept
vii. T- cell co- stimulation modulator- Abatacept
viii. Anti IgE antibody- Ligelizumab

In a study conducted by Debbarman P. et al,[226] the effect of autologous whole blood therapy with some modifications in patients with chronic urticaria was studied. The symptoms of chronic urticaria improved significantly by 5$^{th}$ week of initiation of therapy.[226] Bajaj et al used serum in place of whole blood for autologous therapy.[227] The mechanism of action of autologous serum therapy is thought to be the induction of anti- idiotypic antibodies which have been shown to inhibit the function of disease inducing antibodies in pemphigus. These antibodies are also responsible for the shift of TH2 cytokine profile to TH1 cytokines profile in ASST positive patients.[228,229]

Treatment in Pregnancy and lactating women:

In general, any systemic drug should be avoided in pregnancy, especially in the first trimester. Small sample size studies are available for the use of cetirizine[230] and large meta- analysis is available for the use of loratadine[231] in chronic urticaria. All H1 antihistamines are excreted in breast milk albeit in low concentrations. Second generation H1 antihistamines should be used as first generation antihistamines have a sedating effect on infants. Desloratadine can also be used in lactation as it is not metabolized in liver.[112] Omalizumab is also safe in pregnancy as no teratogenic outcome is reported till date.[232,233] First generation H1

antihistamines should be avoided in pregnancy and lactation.[215] Further course of action depends on the risk- benefit ratio.[112]

**EFFECT OF CHRONIC URTICARIA ON QoL:**

Symptoms of chronic urticaria, i.e itching, weals and angioedema affect daily activities to a great extent. They affect sleep/ rest, personal care, work performance and social relationships. Emotional functioning is also impaired.[1] Skin pruritus causes variable discomfort, as well as lesions, which, depending on their number and location, may harm an individual's physical appearance and social life.[34,234]

Being a subjective concept, QoL has gained clinical and economic importance over the past decade. It is now a fundamental indicator in all chronic diseases and in the comparative effectiveness of different treatments.[1]

Various tools can be used to determine the QoL in patients suffering from chronic urticaria. These are:[36- 41]

1. Short form- 36 health survey (SF36)
2. Satisfaction Profile (SAT- P)
3. Chronic urticaria quality of life questionnaire (CU-$Q_2$oL)
4. Urticaria activity score (UAS)
5. Dermatology life quality index (DLQI)

The Dermatology Life Quality Index questionnaire is designed for use in patients over the age of 16. It is a self-explanatory questionnaire. It can be simply handed to the patient and the patient is asked to fill it in without the need for detailed explanation. The questions are classified under 6 headings: symptoms and feelings (questions 1 and 2), daily activities (questions 3 and 4), leisure (questions 5 and 6) and personal relationships (questions 8 and 9) each item with maximum score 6; work and school (question 7), and treatment (question 10) each item with maximum score 3.[41] The greater the total score, greater is the impairment of QoL. A total score of 0-1 implies no impairment of QoL, 2-6 implies mild impairment of

QoL, 6-10 implies moderate impairment, 11-20 implies severe impairment and 21-30 implies very severe impairment of QoL.[44]

DLQI has been established as a valid, reliable and clinically useful outcome measure for assessing QOL in patients with CIU in a study by Lennox et al.[41]

A study of 50 patients was conducted in India in 2006 by K V Godse to assess the quality of life in patients of chronic urticaria using DLQI in which the mean score was 7.16.[235]

Similarly, a study was conducted in Nepal from January 2018 to December 2019 on 149 patients to assess the QoL in patients suffering from chronic urticaria using DLQI. The mean DLQI score was 8.30±0.55.[44]

# MATERIALS AND METHODS

**Source of Data**

Patients who attended the outpatient and inpatient Department of Dermatology of Dayanand Medical College and Hospital, Ludhiana, constituted the study material and the source of data.

**METHOD OF COLLECTION OF DATA**

**Study Design:** An observational study.

**INCLUSION CRITERIA:**

- A total of one hundred and fifty (150) clinically diagnosed cases of chronic urticaria who attended the outpatient and inpatient Department of Dermatology of Dayanand Medical College and Hospital, Ludhiana, were included in the study.
- Patients with disease duration of 6 weeks or more were included.
- Patients more than 18 years of age were included.

**EXCLUSION CRITERIA:**

- Patients who were not willing to participate were excluded.
- Patients who were not willing to fill the questionnaire were excluded.
- Patients who were not willing to give consent were excluded.
- Patients less than 18 years of age were excluded.

**Number of cases:**

One Hundred and fifty (150) cases

**METHOD:**

A total of hundred and fifty (150) clinically diagnosed cases of chronic urticaria above the age of 18 years were included in this study. After informed consent, detailed history of the patients including duration of disease, demographic details, history of any previous treatment taken, satisfaction with treatment, was taken. Cutaneous examination was done and the patient was asked to fill a detailed questionnaire.

The dermatology life quality index (DLQI) is a ten-question questionnaire used to measure the impact of skin disease on the quality of life of an affected person. It is designed for people aged 16 years and above with a recall period of 7 days.

It is a detailed self-explanatory questionnaire and was available in 3 languages, viz- English, Hindi and Punjabi for the patient's convenience. It was handed over to the patient to be filled by the patient. It was usually completed in 2-3 minutes.

The questions were classified into 6 headings items: symptoms and feelings (questions 1 and 2), daily activities (questions 3 and 4), leisure (questions 5 and 6), work and school (7), personal relationships (8 and 9) and treatment (10).[41]

Responses to items 1-6 and 8-10 had the options: "very much", "a lot", "a little" and "not at all" and these were scored as 3, 2, 1 and 0 respectively. Items 3-6 and 8-10 also had an additional option: "not relevant" which was given a score of 0. Item 7 had 2 parts- the first part had the options of "yes" and "no" which were scored as 3 and 0 respectively. The second part had 3 options: "a lot", "a little" and "not at all" which were scored as 2, 1 and 0 respectively. Thus the maximum score for each question was 3 and minimum score was 0. Thus the maximum DLQI score was 30 and minimum was 0.[41]

Since the DLQI has copyright, licence was obtained to use it in this study.

Apart from the questionnaire, the following data was also collected:

1. Patient's details including name, age, sex, CR No., history (past, personal, family, treatment)
2. Local examination findings
3. Clinical diagnosis

**Outcome**

It was evaluated in view of –

1. Type of urticaria
2. DLQI score

**Statistical Analysis**

Data was described in terms of range; mean ±standard deviation (± SD), frequencies (number of cases) and relative frequencies (percentages) as appropriate. All statistical calculations were done using SPSS (Statistical Package for the Social Science) SPSS 21 version statistical program for Microsoft Windows.

# OBSERVATIONS AND RESULTS

This observational study included one hundred and fifty (150) clinically diagnosed cases of chronic urticaria attending the outpatient department of Dermatology of Dayanand Medical College and Hospital, Ludhiana. No time period was defined for the study. After informed consent, detailed history (including comorbidities, aggravating factors) was taken and clinical examination (in the form of presence or absence of weals/ angioedema/ dermographism) was done. Additionally, each patient was asked to fill a detailed questionnaire containing 10 questions which covered various aspects of daily life to determine the quality of life in patients suffering from chronic urticaria. The questionnaire was available in 3 languages viz, English, Hindi and Punjabi. The observations and data obtained from the study were compiled and analyzed. All the results are depicted in the tables and graphs that follow.

**AGE:**

The age distribution ranged from 18 to 65 years. The most affected age group was 31-40 years with 32.7% (49) cases followed by 21-30 years with 24.7% (37) cases. The mean age was 38.51 ± 12.81 years. **(Table 1 & Figure 1)**

**Table 1: Distribution of patients according to age group**

| **Age group (years)** | No. of cases | Percentage |
|---|---|---|
| 18-20. | 7 | 4.7% |
| 21-30 | 37 | 24.7% |
| 31-40 | 49 | 32.7% |
| 41-50 | 33 | 22.0% |
| 51-60 | 12 | 8.0% |
| 60-65 | 12 | 8.0% |
| Total | 150 | 100.0% |
| **Mean ± Standard Deviation (S.D.) (in years)** | 38.51 ± 12.81 | |

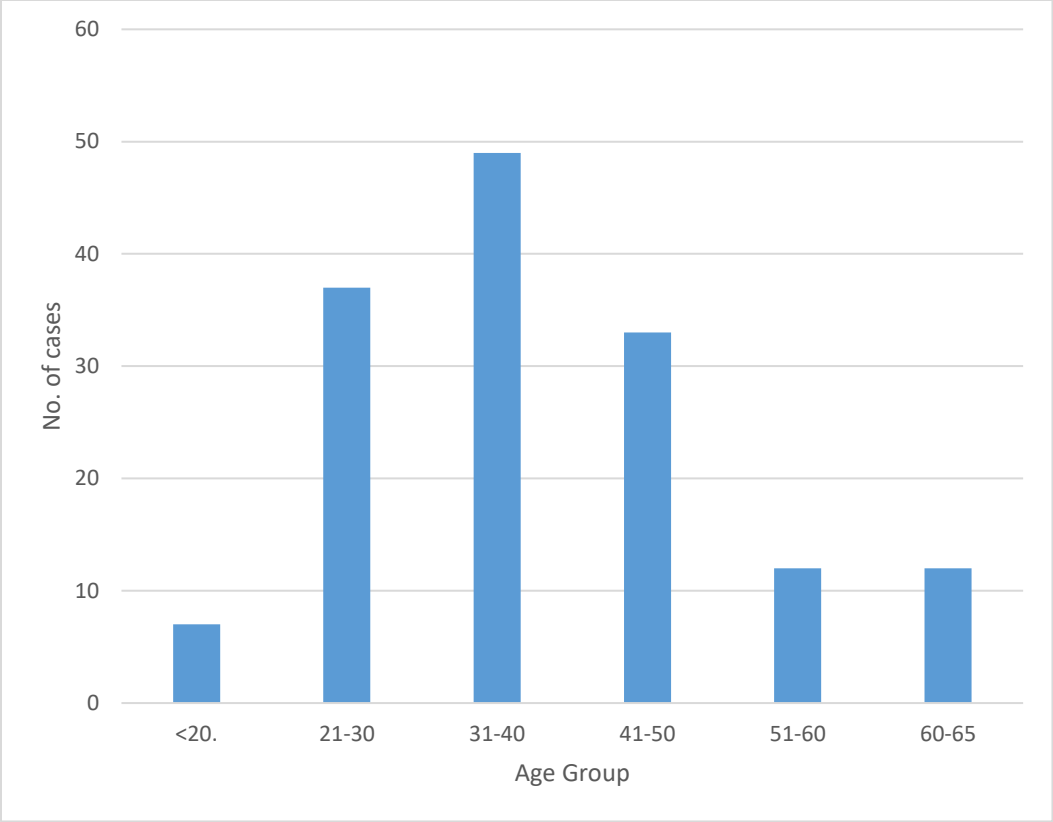


**Figure 1: Distribution of patients according to age group. N= 150**

**GENDER:**

In the present study of 150 clinically diagnosed patients of chronic urticaria, females (62.7%) were predominantly affected than males (37.3%), the male to female ratio being 1:1.68 **(Table 2 & Figure 2)**

**Table 2: Distribution of patients according to gender (N= 150)**

| Gender | No. of cases | Percentage |
|---|---|---|
| Females | 94 | 62.7% |
| Males | 56 | 37.3% |
| Total | 150 | 100.0% |

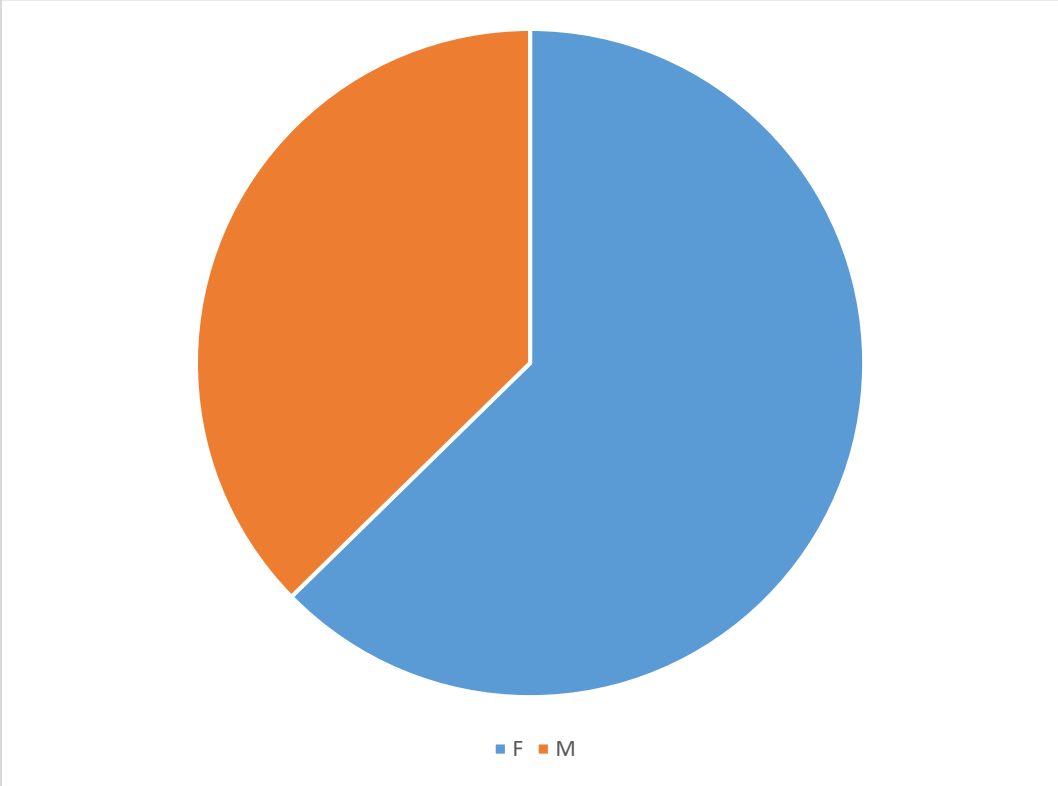


**Figure 2: Distribution of patients according to gender. N= 150**

**DISEASE DURATION:**

The duration of disease ranged from a minimum of 2 months to a maximum of 20 years with mean of 12.49 ± 22.45 months. Maximum, i.e. 31.33% (47) patients had a disease duration of 3-6 months while 21.33% (32) had a disease duration of greater than 12 months. Only 12.66% (19) patients had a disease duration of 1.5-3 months. **(Table 3 & Figure 3)**

**Table 3: Distribution of cases depending upon duration of disease (N= 150)**

| **Disease duration (months)** | **No of cases** | **Percentage** |
|---|---|---|
| 1.5-3 | 19 | 12.66% |
| 3- 6 | 47 | 31.33% |
| 6- 9 | 31 | 20.66% |
| 9- 12 | 21 | 14.00% |
| >12 | 32 | 21.33% |
| **Mean ± Standard Deviation (S.D.) (in months)** | 12.49 ± 22.45 | |

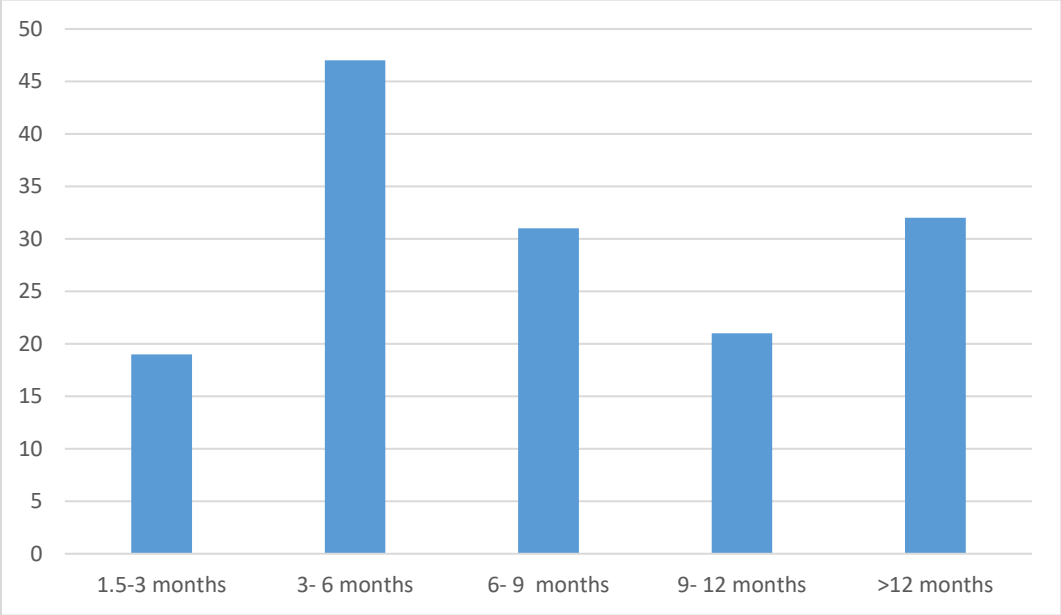


**Figure 3: Distribution of cases depending upon duration of disease (N= 150)**

**CLINICAL FEATURES:**

- In the present study, pruritus was present in 100% of patients.
- Weals were present in 57.33% (86) patients.
- Dermographism was elicited in 52% (78) patients.
- Angioedema was present in 12% (18) patients. **(Table 4 & Figure 4)**

**Table 4: Distribution of patients according to Clinical features.**

| Clinical Features | No. of cases | Percentage % |
|---|---|---|
| Pruritus | 150 | 100% |
| Weals | 86 | 57.33% |
| Dermographism | 78 | 52% |
| Angioedema | 18 | 12% |

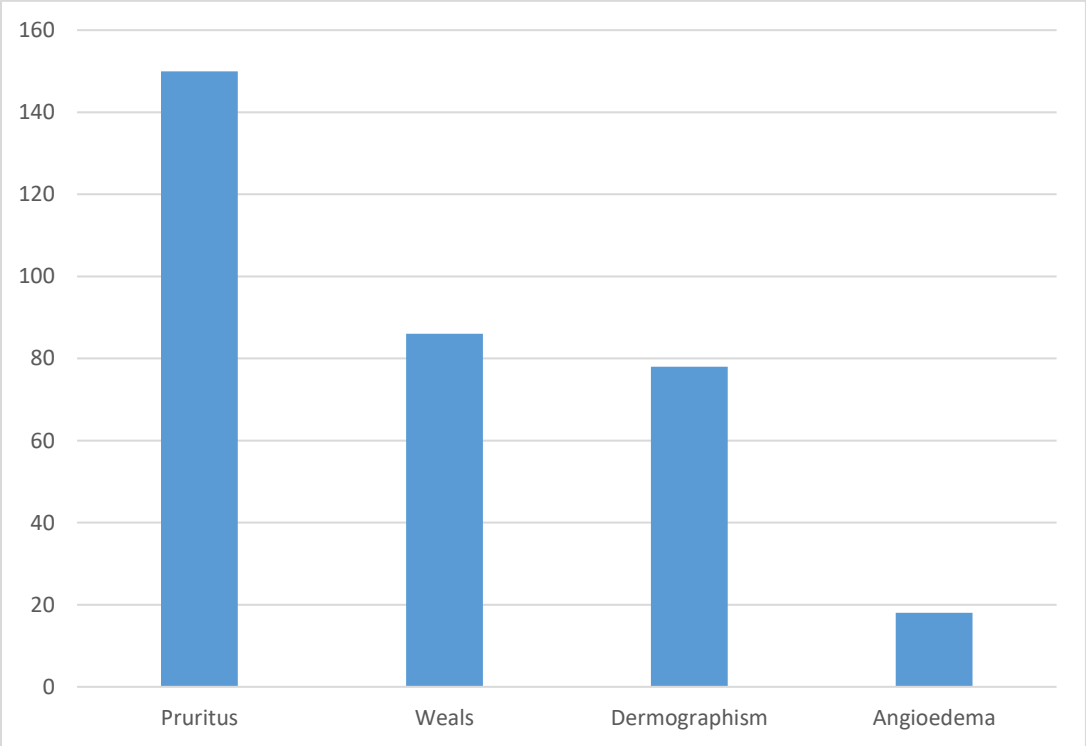


**Figure 4: Distribution of patients according to Clinical features.**

**ASSOCIATION WITH CO-MORBIDITIES:**

In this study of 150 patients, Hypertension (26 cases) was the most commonly associated disease followed by Hypothyroidism (24 cases) and Diabetes mellitus (22 cases). **(Table 5 & Figure 5)**

**Table 5: Association with Co-morbities.**

| CO- MORBIDITY | No. of cases | Percentage % |
|---|---|---|
| Hypertension | 26 | 17.33% |
| Hypothyroidism | 24 | 16% |
| Diabetes mellitus | 22 | 14.66% |
| Bronchial asthma | 7 | 4.66% |
| Coronary artery disease | 6 | 4% |
| Tuberculosis | 3 | 2% |

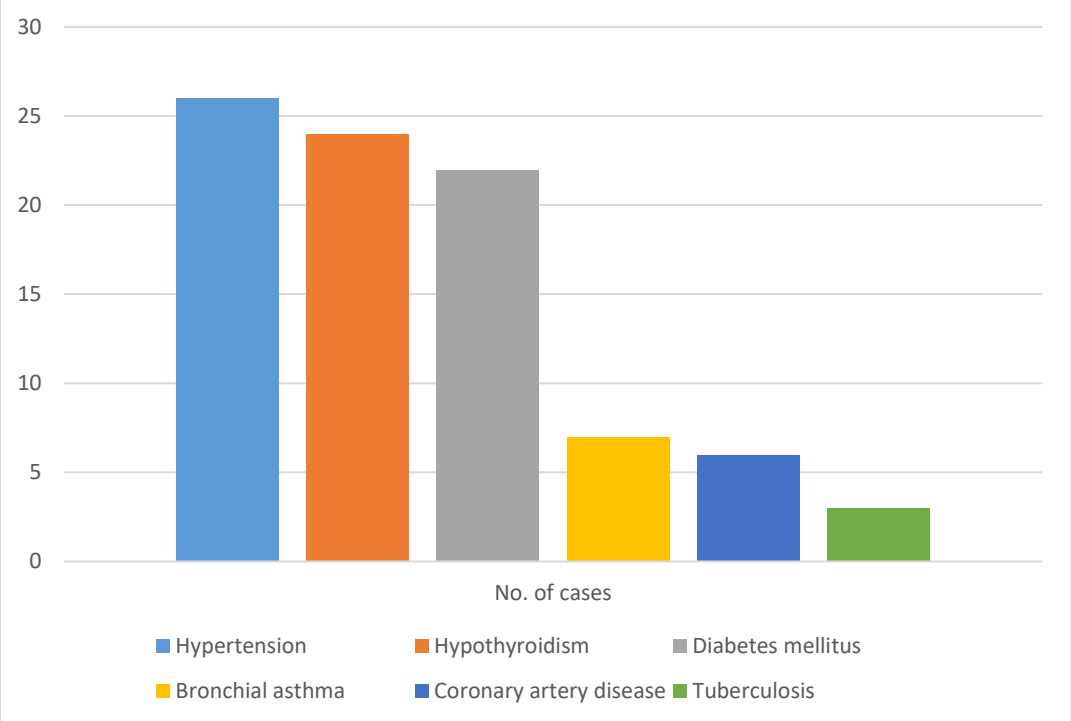

**Figure 5: Association with Co-morbities.**

## PAST HISTORY OF ACUTE URTICARIA/ ANGIOEDEMA

Out of 150 clinically diagnosed patients of chronic urticaria, 22 patients (14.66%) had past history of acute urticaria while 27 patients (18%) had past history of angioedema.

**Table 6: Episode of acute urticaria/ angioedema in past.**

| Past history | Number of cases | Percentage |
|---|---|---|
| Acute urticaria | 22 | 14.66% |
| Angioedema | 27 | 18% |

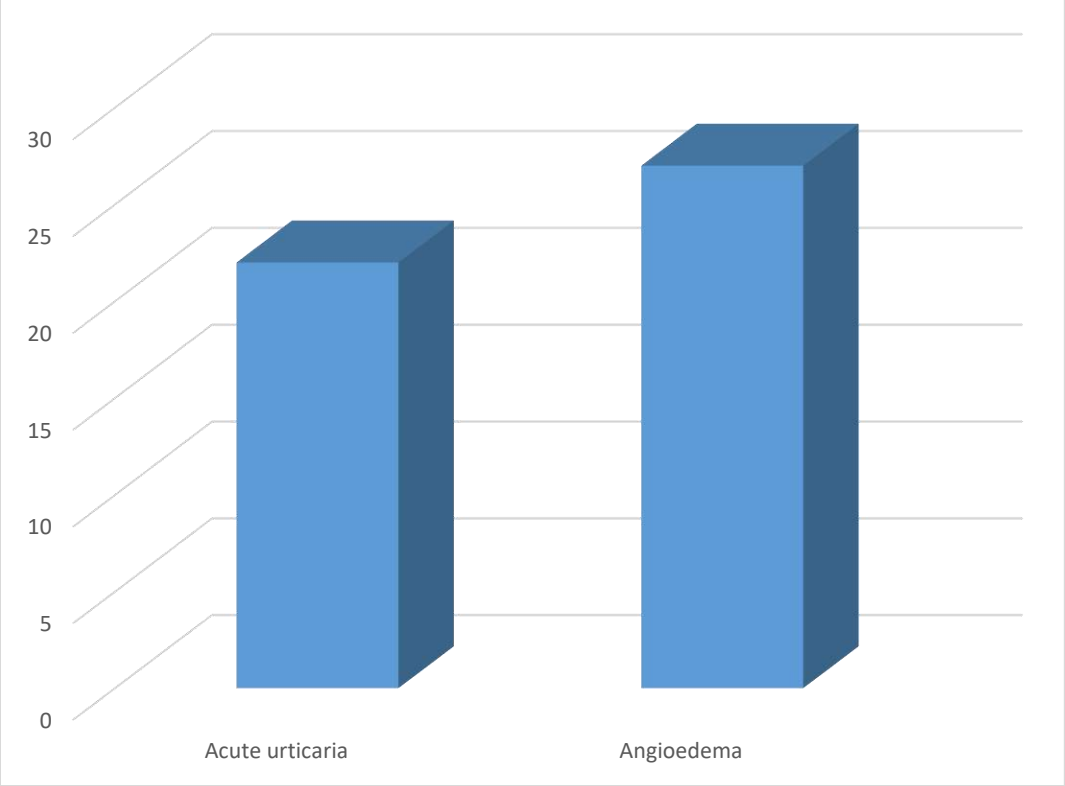


**Figure 6: Episode of acute urticaria/ angioedema in past.**

**FAMILY HISTORY:**

Out of 150 patients included in this study, only 26 patients gave a positive family history of allergic rhinitis/ bronchial asthma/ hypothyroidism in first degree relatives. **(Table 7 & Figure 7)**

**Table 7: Family history in patients suffering from chronic urticaria. N=150**

| Family history | No. of cases | Percentage % |
|---|---|---|
| No history | 124 | 82.7% |
| Allergic rhinitis | 11 | 7.33% |
| Bronchial asthma | 11 | 7.33% |
| Hypothyroidism | 4 | 2.66% |
| Total | 150 | 100% |

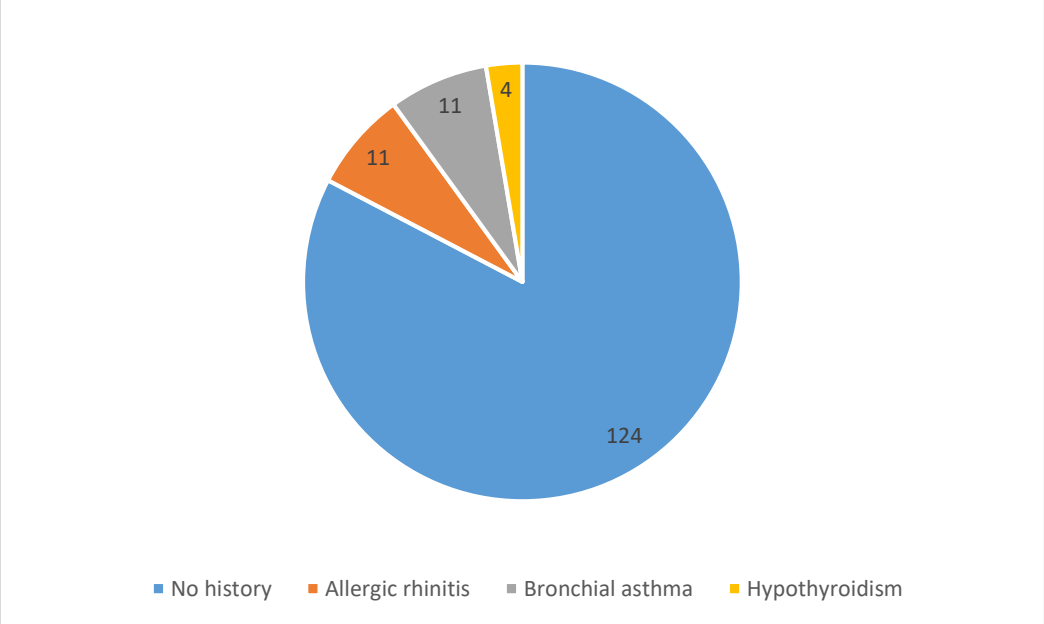

**Figure 7: Family history in patients suffering from chronic urticaria. N=150**

**AGGRAVATING FACTORS:**

- In the present study, the most common aggravating factor was skin stroking, present in 28 (18.66%) patients followed by sweat in 9 (6%) patients.
- Food items (eggs, nuts, rice, chick pea, spicy food) were implicated in 7 (4.66%) patients and heat as an aggravating factor was seen in 5 patients.
- Amongst drugs, NSAIDS were found to be the cause in 3 patients while in 1 patient the drug was not known.
- Pressure was implicated in 3 (2%) patients. **(Table 8 & Figure 8)**

**Table 8: Aggravating factors in patients suffering from chronic urticaria.**

| **Aggravating factors** | **No. of cases** | **Percentage %** |
|---|---|---|
| Skin stroking | 28 | 18.66% |
| Sweat | 9 | 6% |
| Food items | | 4.66% |
| 1. Eggs | 2 | |
| 2. Nuts | 3 | |
| 3. Rice, Chick pea | 1 | |
| 4. Spicy food | 1 | |
| Heat | 5 | 3.33% |
| Drugs | | 2.66% |
| 1. NSAIDS | 3 | |
| 2. Unknown | 1 | |
| Pressure | 3 | 2% |

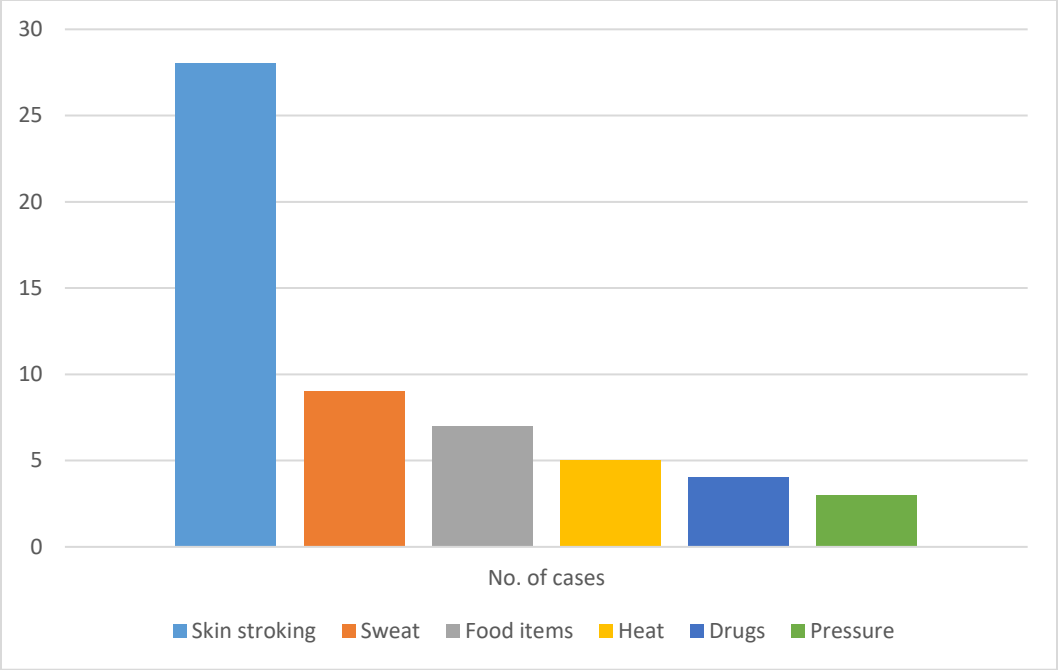


**Figure 8: Aggravating factors in patients suffering from chronic urticaria.**

**DIAGNOSIS:**

- According to the chief complaints, presence or absence of aggravating factors and local examination findings in this study, chronic urticaria was sub- divided into 6 categories.
- The final diagnosis of chronic spontaneous urticaria was made in 72.7% (109) patients.
- 16.7% (25) patients were diagnosed with chronic spontaneous urticaria with symptomatic dermographism.
- 6.7% (10) patients were diagnosed with cholinergic urticaria.
- 2% (3) patients were diagnosed with cholinergic urticaria with symptomatic dermographism.
- 1.3% (2) patients were diagnosed with delayed pressure urticaria
- 0.7% (1) patient had chronic spontaneous urticaria with delayed pressure urticaria. **(Table 9 & Figure 9)**

**Table 9: Distribution of patients according to final diagnosis. N= 150**

| **Final Diagnosis** | **No. of cases** | **Percentage** |
|---|---|---|
| Chronic spontaneous urticaria | 109 | 72.7% |
| Chronic spontaneous urticaria with symptomatic dermographism | 25 | 16.7% |
| Cholinergic urticaria | 10 | 6.7% |
| Cholinergic urticaria with symptomatic dermographism | 3 | 2.0% |
| Delayed pressure urticaria | 2 | 1.3% |
| Chronic spontaneous urticaria with delayed pressure urticaria | 1 | 0.7% |
| Total | 150 | 100.0% |

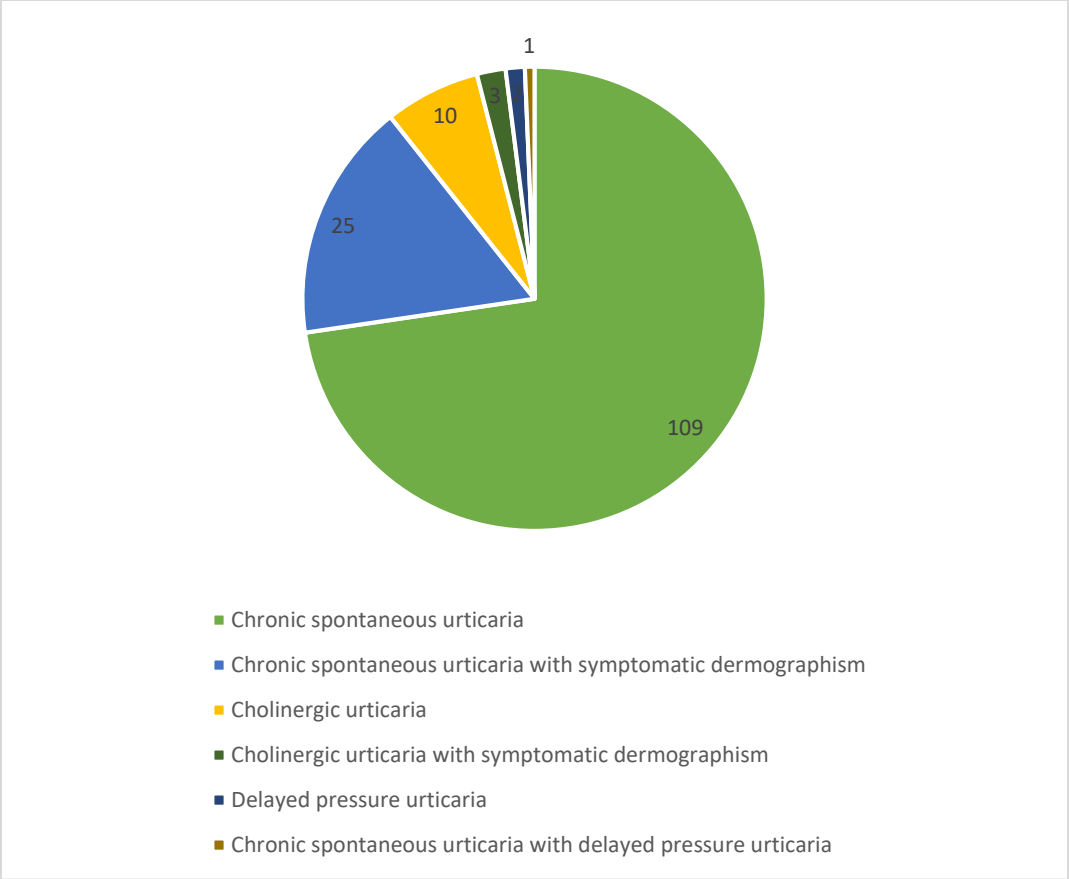


**Figure 9: Distribution of patients according to final diagnosis. N= 150**

## CO-RELATION OF FINAL DIAGNOSIS WITH AGE:

In the present study,

- The peak incidence of chronic spontaneous urticaria (32%) was seen in the age group of 31-40 years. The minimum age was 18 years and maximum was 65 years with mean of 39.54 ± 13.13 years.
- The peak incidence of chronic spontaneous urticaria with symptomatic dermographism (40%) was seen in the age group of 31-40 years. The minimum age was 19 years and maximum was 60 years with mean of 37.68 ± 11.78 years.
- The peak incidence of cholinergic urticaria (40%) was seen in the age group of 41-50 years. The minimum age was 19 years and maximum age was 50 years with a mean of 33.90 ± 11.98 years.
- Cholinergic urticaria with symptomatic dermographism showed equal incidence of 33% in the age groups of 21-30, 31-40 and 41-50 years. The minimum age was 21 years and maximum was 48 years with mean of 34.67 ± 13.50 years.
- The peak incidence of delayed pressure urticaria (100%) was seen in the age group of 21-30 years. The minimum age was 21 years and maximum was 28 years with mean of 24.50 ± 4.95 years
- There was only 1 case of chronic spontaneous urticaria with delayed pressure urticaria. Therefore 100% incidence was seen in the age group of 31-40 years. **(Table 10 & Figure 10)**

**Table 10: Co-relation of different types of urticaria with age group. N=150**

| Age (years) | CHRONIC SPOTANEOUS URTICARIA (109) | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM (25) | CHOLINERGIC URTICARIA (10) | CHOLINERGIC URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM (3) | DELAYED PRESSURE URTICARIA (2) | CHRONIC SPONTANEOUS URTICARIA WITH DELAYED PRESSURE URTICARIA (1) |
|---|---|---|---|---|---|---|
| 18-20 | 3% | 4% | 30% | 0% | 0% | 0% |
| 21-30 | 26% | 20% | 10% | 33% | 100% | 0% |
| 31-40 | 32% | 40% | 20% | 33% | 0% | 100% |
| 41-50 | 20% | 24% | 40% | 33% | 0% | 0% |
| 51-60 | 8% | 12% | 0% | 0% | 0% | 0% |
| 60-65 | 11% | 0% | 0% | 0% | 0% | 0% |
| **Mean ± S.D (years)** | 39.54 ±13.13 | 37.68 ± 11.78 | 33.90±1.98 | 34.67 ± 13.50 | 24.50±4.95 | 32.00±0.00 |

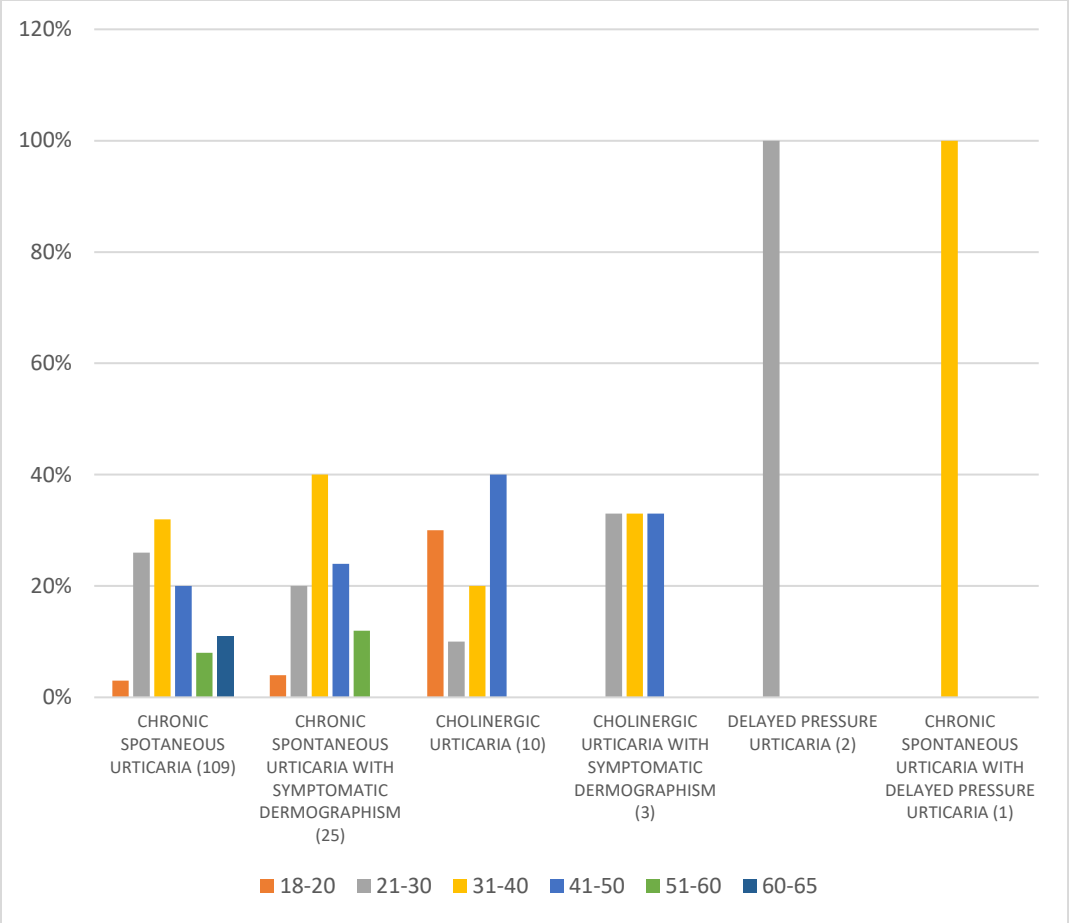


**Figure 10: Co-relation of different types of urticaria with age group. N=150**

## CO-RELATION OF FINAL DIAGNOSIS WITH GENDER:

In the present study,

- Female preponderance was seen in chronic spontaneous urticaria (65%), chronic spontaneous urticaria with symptomatic dermographism (76%) and chronic spontaneous urticaria with delayed pressure urticaria (100%)
- Male predominance was in seen in cholinergic urticaria (80%), cholinergic urticaria with symptomatic dermographism (67%) and delayed pressure urticaria (100%) **(Table 11 & Figure 11)**

**Table 11: Co-relation of different types of urticaria with gender. N=150**

| Gender | CHRONIC SPOTANEOUS URTICARIA (109) | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM (25) | CHOLINERGIC URTICARIA (10) | CHOLINERGIC URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM (3) | DELAYED PRESSURE URTICARIA (2) | CHRONIC SPONTANEOUS URTICARIA WITH DELAYED PRESSURE URTICARIA (1) |
|---|---|---|---|---|---|---|
| Female | 65% | 76% | 20% | 33% | 0% | 100% |
| Male | 35% | 24% | 80% | 67% | 100% | 0% |

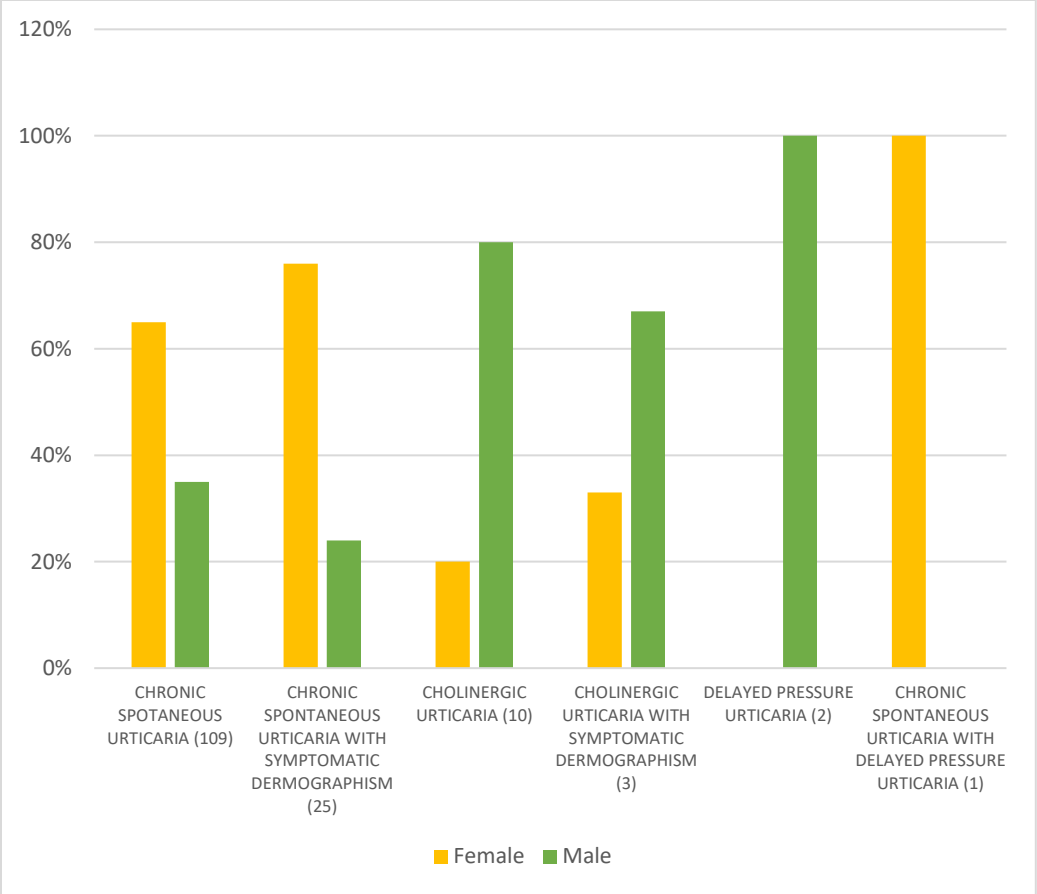


**Figure 11: Co-relation of different types of urticaria with gender. N=150**

## CO-RELATION OF COMORBITIES WITH FINAL DIAGNOSIS

In the present study,

- Hypertension was present in 23 cases of chronic spontaneous urticaria, 2 cases of chronic spontaneous urticaria with symptomatic dermographism and 1 case of cholinergic urticaria.
- Hypothyroidism was present in 19 cases of chronic spontaneous urticaria, 4 cases of chronic spontaneous urticaria with symptomatic dermographism and 1 case of cholinergic urticaria with symptomatic dermographism.
- Diabetes mellitus was present in 18 cases of chronic spontaneous urticaria and 4 cases of chronic spontaneous urticaria with symptomatic dermographism.
- Bronchial asthma was present in 5 cases of chronic spontaneous urticaria and 2 cases of chronic spontaneous urticaria with symptomatic dermographism.
- Coronary artery disease was present in 6 cases of chronic spontaneous urticaria.
- Tuberculosis was present in 2 cases of chronic spontaneous urticaria and 1 case of chronic spontaneous urticaria with symptomatic dermographism.
- The co-relation of co- morbities with different types of urticaria was statistically insignificant (p value >0.05) as shown in **Table 12**.

**Table 12: Co-relation of co- morbities with final diagnosis**

| COMORBIDITIES | CHRONIC SPOTANEOUS URTICARIA (109) | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM (25) | CHOLINERGIC URTICARIA (10) | CHOLINERGIC URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM (3) | DELAYED PRESSURE URTICARIA (2) | CHRONIC SPONTANEOUS URTICARIA WITH DELAYED PRESSURE URTICARIA (1) | P-VALUE |
|---|---|---|---|---|---|---|---|
| **Hypertension** | 23 | 2 | 1 | 0 | 0 | 0 | 0.516 |
| **Hypothyroidism** | 19 | 4 | 0 | 1 | 0 | 0 | 0.652 |
| **Diabetes mellitus** | 18 | 4 | 0 | 0 | 0 | 0 | 0.687 |
| **Bronchial asthma** | 5 | 2 | 0 | 0 | 0 | 0 | 0.923 |
| **Coronary artery disease** | 6 | 0 | 0 | 0 | 0 | 0 | 0.799 |
| **Tuberculosis** | 2 | 1 | 0 | 0 | 0 | 0 | 0.974 |

## DETERMINATION OF QUALITY OF LIFE (QoL) IN CHRONIC URTICARIA:

To determine the QoL in patients suffering from chronic urticaria, a standard Dermatology Life Quality Index (DLQI) questionnaire was used.

## CHRONIC SPONTANEOUS URTICARIA AND DLQI:

In the present study, the maximum effect on quality of life in chronic spontaneous urticaria was seen in the case of itching (mean DLQI of 2.37 $\pm$ 0.64) while the least affected aspect was the difficulty in doing sports (mean DLQI of 0.25 $\pm$ 0.70) **(Table 13 & Figure 12)**

**Table 13: Chronic spontaneous urticaria and DLQI. N= 109**

| Questions | CHRONIC SPOTANEOUS URTICARIA (MEAN DLQI) | S.D. |
|---|---|---|
| Q1 | 2.37 | 0.64 |
| Q2 | 1.39 | 1.16 |
| Q3 | 1.48 | 1.09 |
| Q4 | 1.26 | 0.98 |
| Q5 | 1.34 | 0.88 |
| Q6 | 0.25 | 0.70 |
| Q7 | 1.87 | 1.02 |
| Q8 | 0.75 | 0.75 |
| Q9 | 0.53 | 0.68 |
| Q10 | 1.09 | 1.14 |

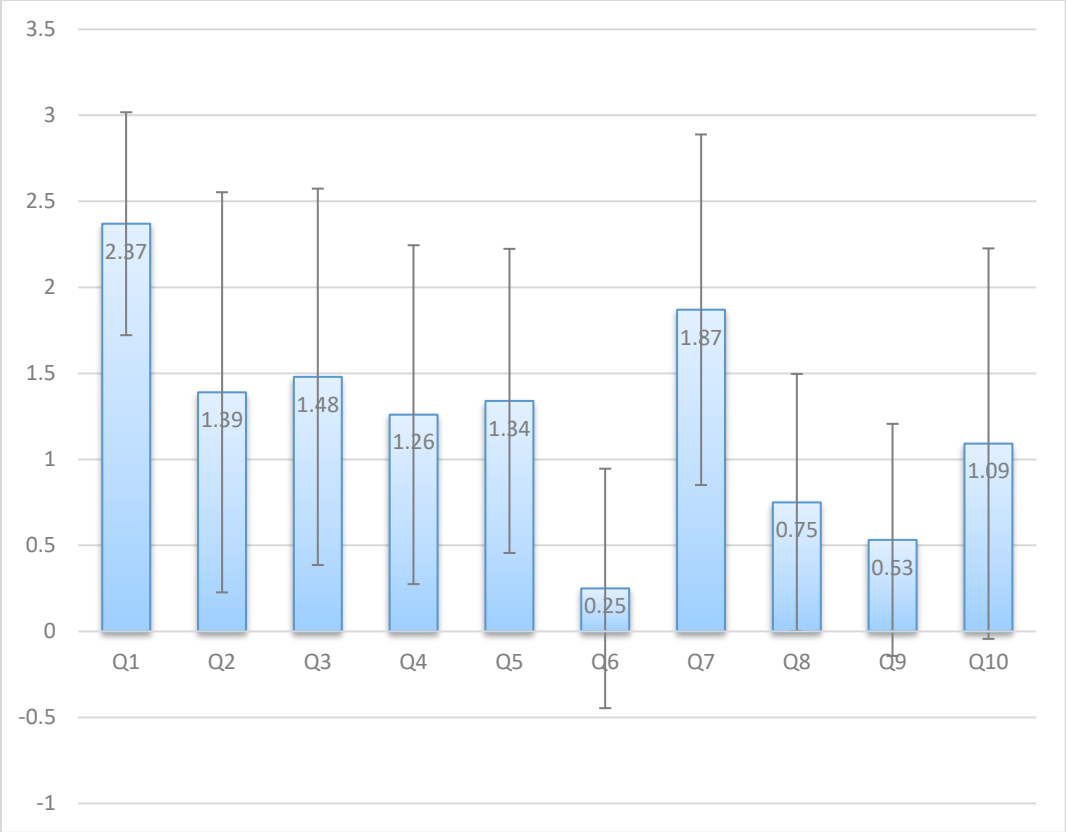


**Figure 12: Chronic spontaneous urticaria and DLQI. N= 109**

## CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM AND DLQI:

In the present study, the maximum effect on quality of life in chronic spontaneous urticaria with symptomatic dermographism was seen in the case of itching (mean DLQI of 2.28 ± 0.89) while the least affected aspects was difficulty in doing sports (mean DLQI of 0.56 ± 0.96) **(Table 14 & Figure 13)**

**Table 14: Chronic spontaneous urticaria with symptomatic dermographism and DLQI. N= 25**

| QUESTIONS | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM (MEAN DLQI) | S.D. |
|---|---|---|
| Q1 | 2.28 | 0.89 |
| Q2 | 1.60 | 1.08 |
| Q3 | 1.48 | 1.09 |
| Q4 | 1.40 | 0.96 |
| Q5 | 1.40 | 0.87 |
| Q6 | 0.56 | 0.96 |
| Q7 | 2.12 | 0.97 |
| Q8 | 0.64 | 0.70 |
| Q9 | 0.72 | 0.84 |
| Q10 | 1.08 | 0.99 |

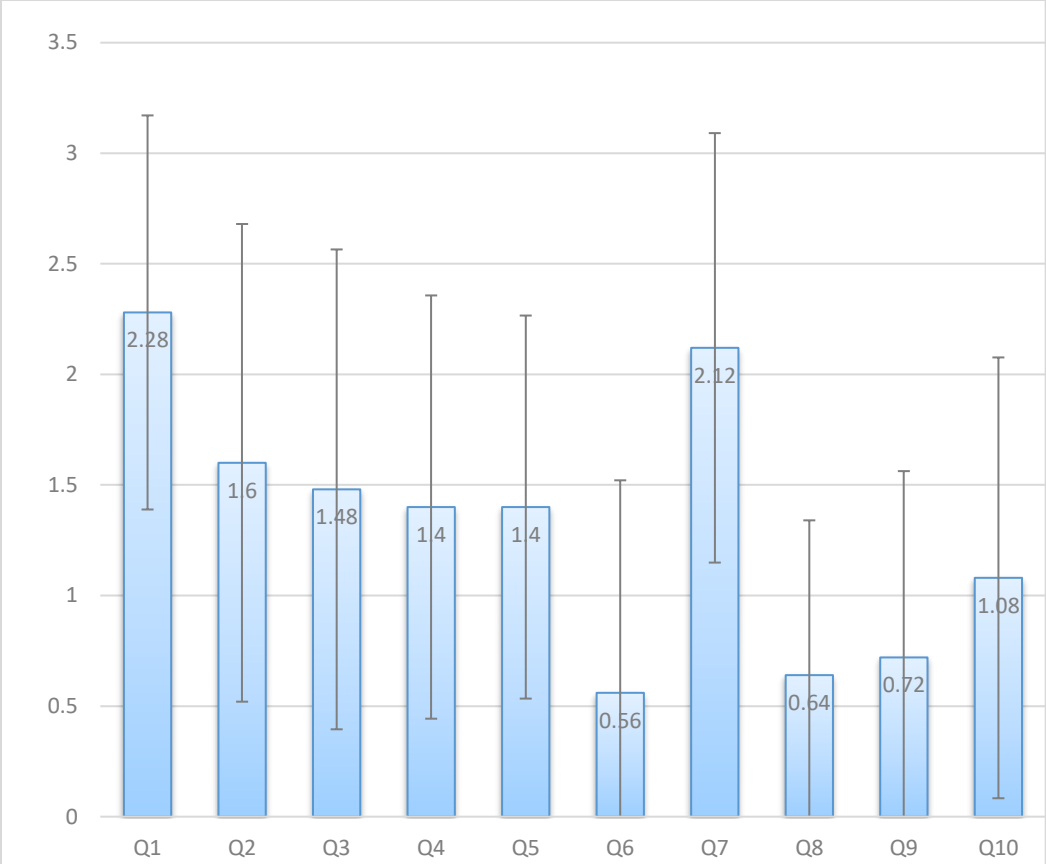


**Figure 13: Chronic spontaneous urticaria with symptomatic dermographism and DLQI. N= 25**

## CHOLINERGIC URTICARIA AND DLQI:

In the present study, maximum effect on quality of life in cholinergic urticaria was seen in case of itching (mean DLQI of 2.40 ± 0.52) and on the type of clothes worn (mean DLQI of 2.40 ± 0.70) while the minimum effect was on the problem that the treatment created (mean DLQI of 0.40 ± 0.97). **(Table 15 and Figure 14)**

**Table 15: Cholinergic urticaria and DLQI. N=10**

| **Questions** | **CHOLINERGIC URTICARIA (MEAN DLQI)** | **S.D.** |
|---|---|---|
| Q1 | 2.40 | 0.52 |
| Q2 | 1.30 | 0.95 |
| Q3 | 2.00 | 0.82 |
| Q4 | 2.40 | 0.70 |
| Q5 | 1.20 | 0.79 |
| Q6 | 0.60 | 0.97 |
| Q7 | 2.20 | 1.14 |
| Q8 | 0.70 | 0.48 |
| Q9 | 0.60 | 0.70 |
| Q10 | 0.40 | 0.97 |

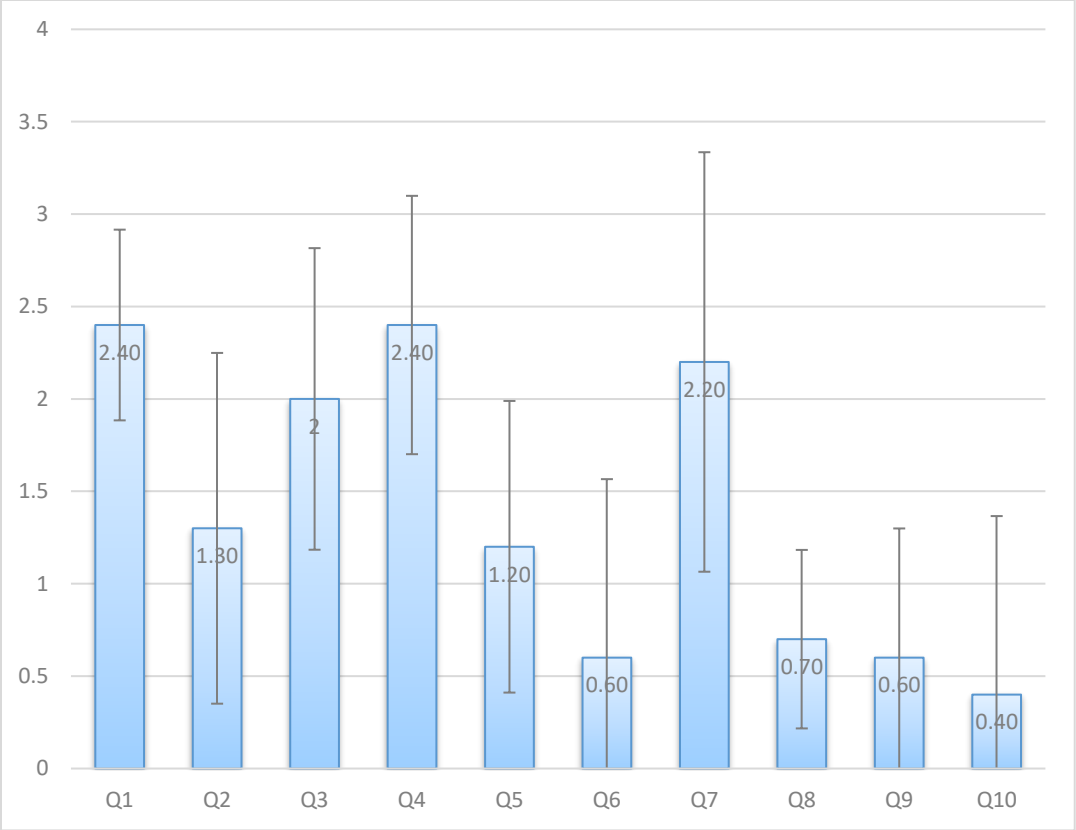


**Figure 14: Cholinergic urticaria and DLQI. N=10**

## CHOLINERGIC URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM AND DLQI:

In the present study, the maximum effect on quality of life in cholinergic urticaria with symptomatic dermographism was seen in the case of itching (mean DLQI of 2.33 ± 0.58) while the least affected aspects were difficulty in doing sport (mean DLQI of 0.33 ± 0.58), sexual activities (mean DLQI of 0.33 ± 0.58) and the problem that the treatment created (mean DLQI of 0.33 ± 0.58). **(Table 16 & Figure 15)**

**Table 16: Cholinergic urticaria with symptomatic dermographism and DLQI. N= 3**

| Questions | CHOLINERGIC URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM (MEAN DLQI) | S.D. |
|---|---|---|
| Q1 | 2.33 | 0.58 |
| Q2 | 1.33 | 0.58 |
| Q3 | 1.67 | 1.16 |
| Q4 | 2.00 | 0.00 |
| Q5 | 1.00 | 0.00 |
| Q6 | 0.33 | 0.58 |
| Q7 | 2.00 | 1.00 |
| Q8 | 1.00 | 0.00 |
| Q9 | 0.33 | 0.58 |
| Q10 | 0.33 | 0.58 |

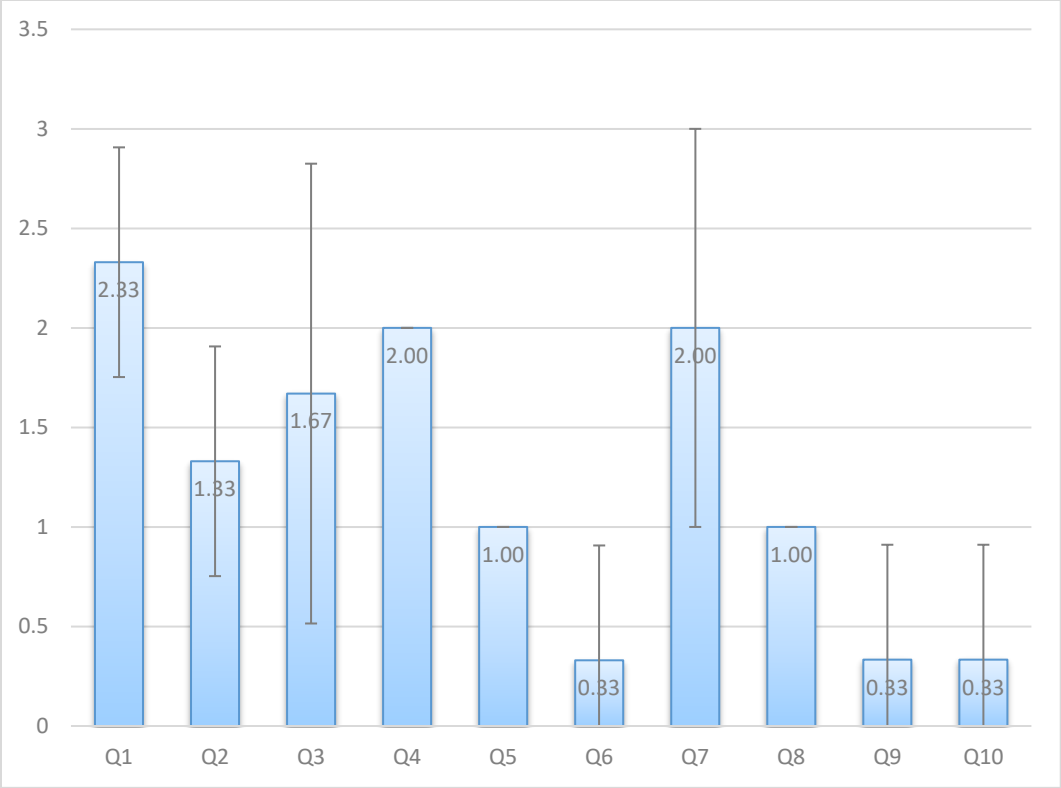


**Figure 15: Cholinergic urticaria with symptomatic dermographism and DLQI. N= 3**

## DELAYED PRESSURE URTICARIA AND DLQI:

In the present study, the maximum effect on quality of life in delayed pressure urticaria was seen in work or study aspect (mean DLQI of 2.12 ± 0.97) while the least affected aspects were impact on shopping or looking after home or garden (mean DLQI of 0) and the problem that the treatment created (mean DLQI of 0) **(Table 17 & Figure 16)**

**Table 17: Delayed pressure urticaria and DLQI. N= 2**

| QUESTIONS | DELAYED PRESSURE URTICARIA (MEAN DLQI) | S.D. |
|---|---|---|
| Q1 | 2.00 | 0.00 |
| Q2 | 0.50 | 0.71 |
| Q3 | 0 | 0.00 |
| Q4 | 2.00 | 0.00 |
| Q5 | 2.00 | 0.00 |
| Q6 | 0.56 | 0.96 |
| Q7 | 2.12 | 0.97 |
| Q8 | 0.50 | 0.71 |
| Q9 | 1.00 | 1.41 |
| Q10 | 0 | 0.00 |

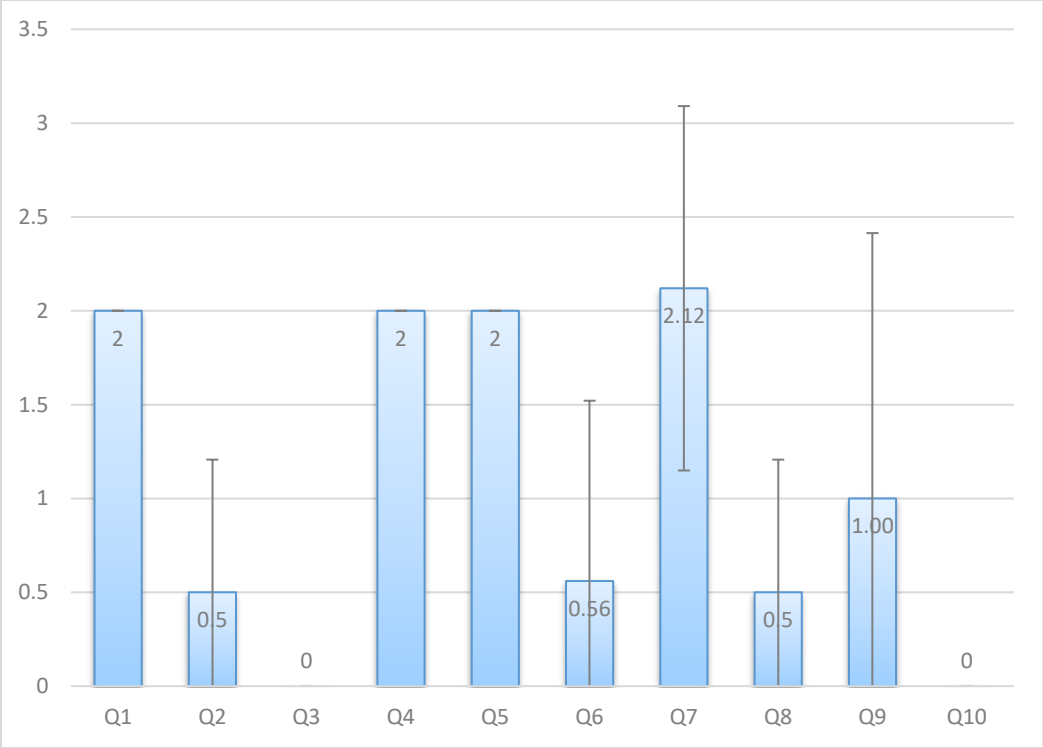


**Figure 16: Delayed pressure urticaria and DLQI. N= 2**

## CHRONIC SPONTANEOUS URTICARIA WITH DELAYED PRESSURE URTICARIA AND DLQI:

In the present study, the maximum effect on quality of life in chronic spontaneous urticaria with delayed pressure urticaria was seen in the case of itching (mean DLQI of 2) **(Table 18 & Figure 17)**

**Table 18: Chronic spontaneous urticaria with delayed pressure urticaria and DLQI. N= 1**

| Questions | CHRONIC SPONTANEOUS URTICARIA WITH DELAYED PRESSURE URTICARIA (MEAN DLQI) | S.D. |
|---|---|---|
| Q1 | 2 | 0 |
| Q2 | 0 | 0 |
| Q3 | 1 | 0 |
| Q4 | 1 | 0 |
| Q5 | 1 | 0 |
| Q6 | 0 | 0 |
| Q7 | 1 | 0 |
| Q8 | 0 | 0 |
| Q9 | 0 | 0 |
| Q10 | 0 | 0 |

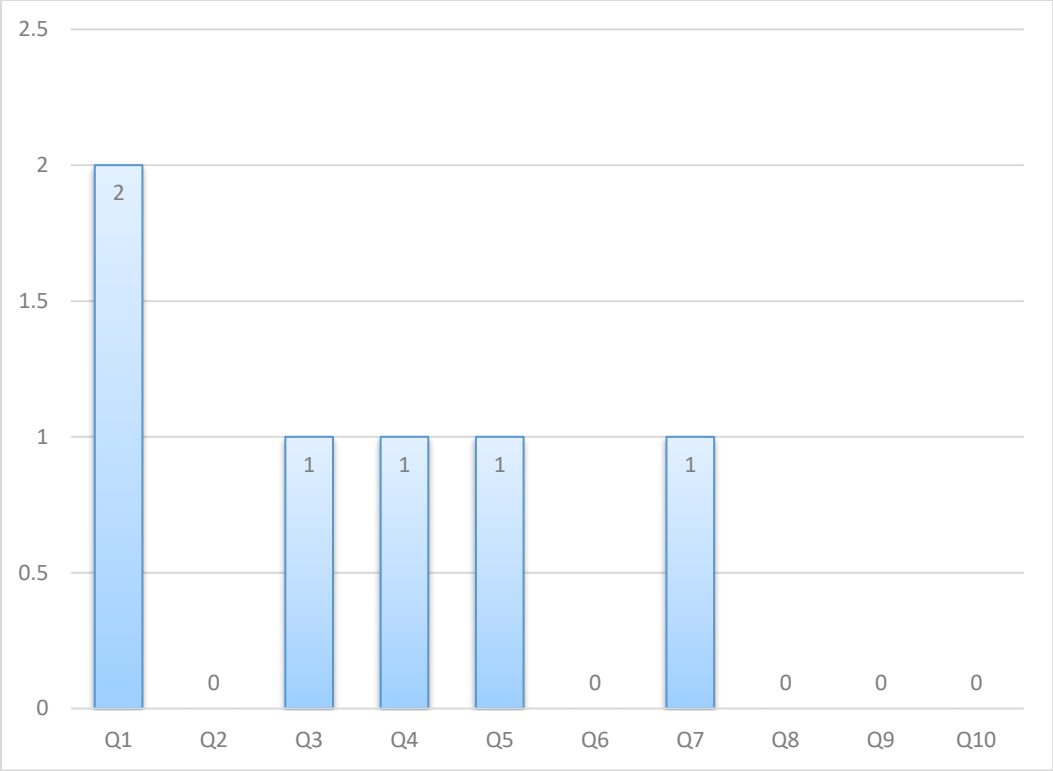


**Figure 17: Chronic spontaneous urticaria with delayed pressure urticaria and DLQI. N= 1**

**RESPONSE TO QUESTION 1:**

In the present study,

- The highest mean score for question 1 was seen in cholinergic urticaria (2.40 ± 0.57) followed by chronic spontaneous urticaria (2.37 ± 0.65).
- The lowest mean score for question 1 was seen in delayed pressure urticaria (2) and chronic spontaneous urticaria with delayed pressure urticaria (2). **(Table 19 & Figure 18)**

**Table 19: Co- relation of response to Question 1 with final diagnosis.**

| QUESTION 1 | CHRONIC SPOTANEOUS URTICARIA (109) | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM (25) | CHOLINERGIC URTICARIA (10) | CHOLINERGIC URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM (3) | DELAYED PRESSURE URTICARIA (2) | CHRONIC SPONTANEOUS URTICARIA WITH DELAYED PRESSURE URTICARIA (1) | Average |
|---|---|---|---|---|---|---|---|
| **Minimum Score** | 1 | 0 | 2 | 2 | 2 | 2 | |
| **Maximum Score** | 3 | 3 | 3 | 3 | 2 | 2 | |
| **Mean ± S.D.** | 2.37±0.65 | 2.28 ± 0.89 | 2.40 ± 0.57 | 2.33 ± 0.58 | 2 ± 0 | 2 ± 0 | 2.35±0.68 |

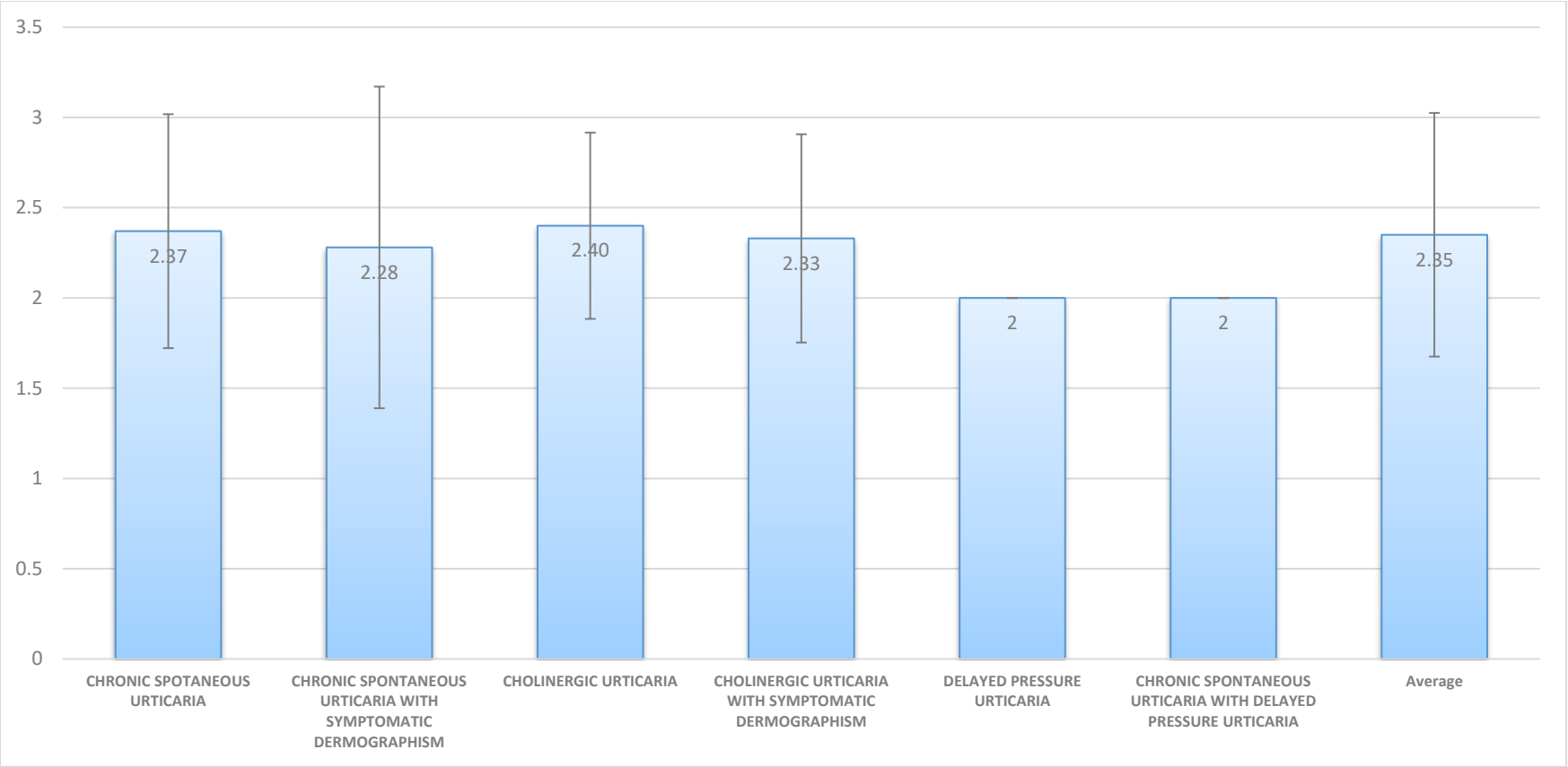


**Figure 18: Co- relation of response to Question 1 with final diagnosis.**

**RESPONSE TO QUESTION 2:**

In the present study,

- The highest mean score for question 2 was seen in chronic spontaneous urticaria with symptomatic dermographism (1.60 ± 1.08) followed by chronic spontaneous urticaria (1.39 ± 1.16)
- The lowest mean score was seen in chronic spontaneous urticaria with delayed pressure urticaria (0) **(Table 20 & Figure 19)**

**Table 20: Co- relation of response to Question 2 with final diagnosis.**

| QUESTION 2 | CHRONIC SPOTANEOUS URTICARIA (109) | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM (25) | CHOLINERGIC URTICARIA (10) | CHOLINERGIC URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM (3) | DELAYED PRESSURE URTICARIA (2) | CHRONIC SPONTANEOUS URTICARIA WITH DELAYED PRESSURE URTICARIA (1) | Average |
|---|---|---|---|---|---|---|---|
| **Minimum Score** | 0 | 0 | 0 | 1 | 0 | 0 | |
| **Maximum Score** | 3 | 3 | 2 | 2 | 1 | 0 | |
| **Mean ± S.D.** | 1.39 ± 1.16 | 1.60 ± 1.08 | 1.30 ± 0.95 | 1.33 ± 0.58 | 0.50 ± 0.71 | 0 ± 0 | 1.40±1.12 |

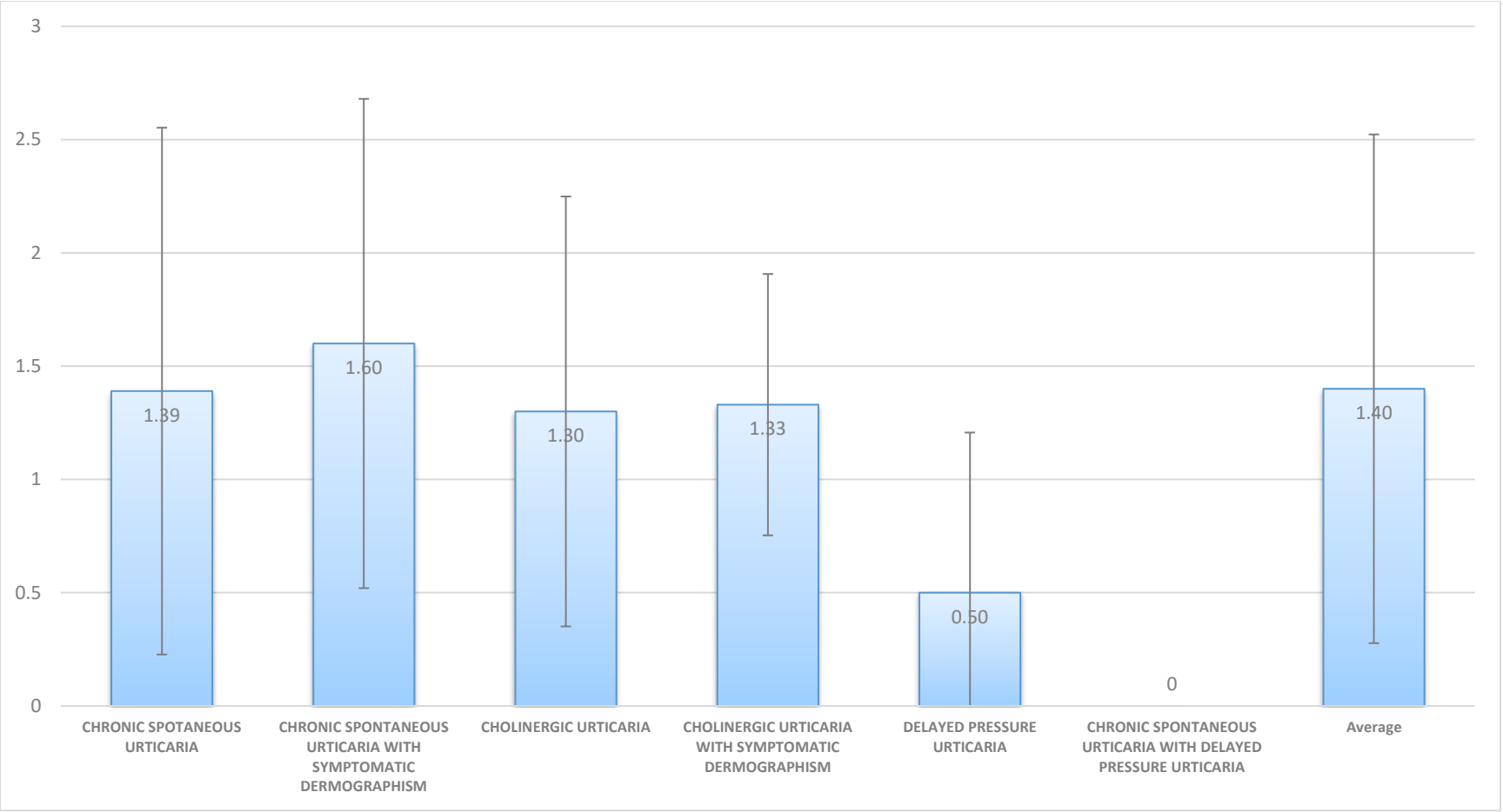


**Figure 19: Co- relation of response to Question 2 with final diagnosis.**

**RESPONSE TO QUESTION 3:**

In the present study,

- The highest mean score for question 3 was seen in cholinergic urticaria (2 ± 0.82) followed by cholinergic urticaria with symptomatic dermographism (1.67 ± 1.16).
- The lowest mean score was seen in delayed pressure urticaria (0) **(Table 21 & Figure 20)**

**Table 21: Co- relation of response to Question 3 with final diagnosis.**

| QUESTION 3 | CHRONIC SPOTANEOUS URTICARIA (109) | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM (25) | CHOLINERGIC URTICARIA (10) | CHOLINERGIC URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM (3) | DELAYED PRESSURE URTICARIA (2) | CHRONIC SPONTANEOUS URTICARIA WITH DELAYED PRESSURE URTICARIA (1) | AVERAGE |
|---|---|---|---|---|---|---|---|
| **Minimum Score** | 0 | 0 | 1 | 1 | 0 | 1 | |
| **Maximum Score** | 3 | 3 | 3 | 3 | 0 | 1 | |
| **Mean ± S.D.** | 1.48 ± 1.09 | 1.48 ± 1.09 | 2.00 ± 0.82 | 1.67 ± 1.16 | 0 ± 0 | 1 ± 0 | 1.49 ±1.08 |

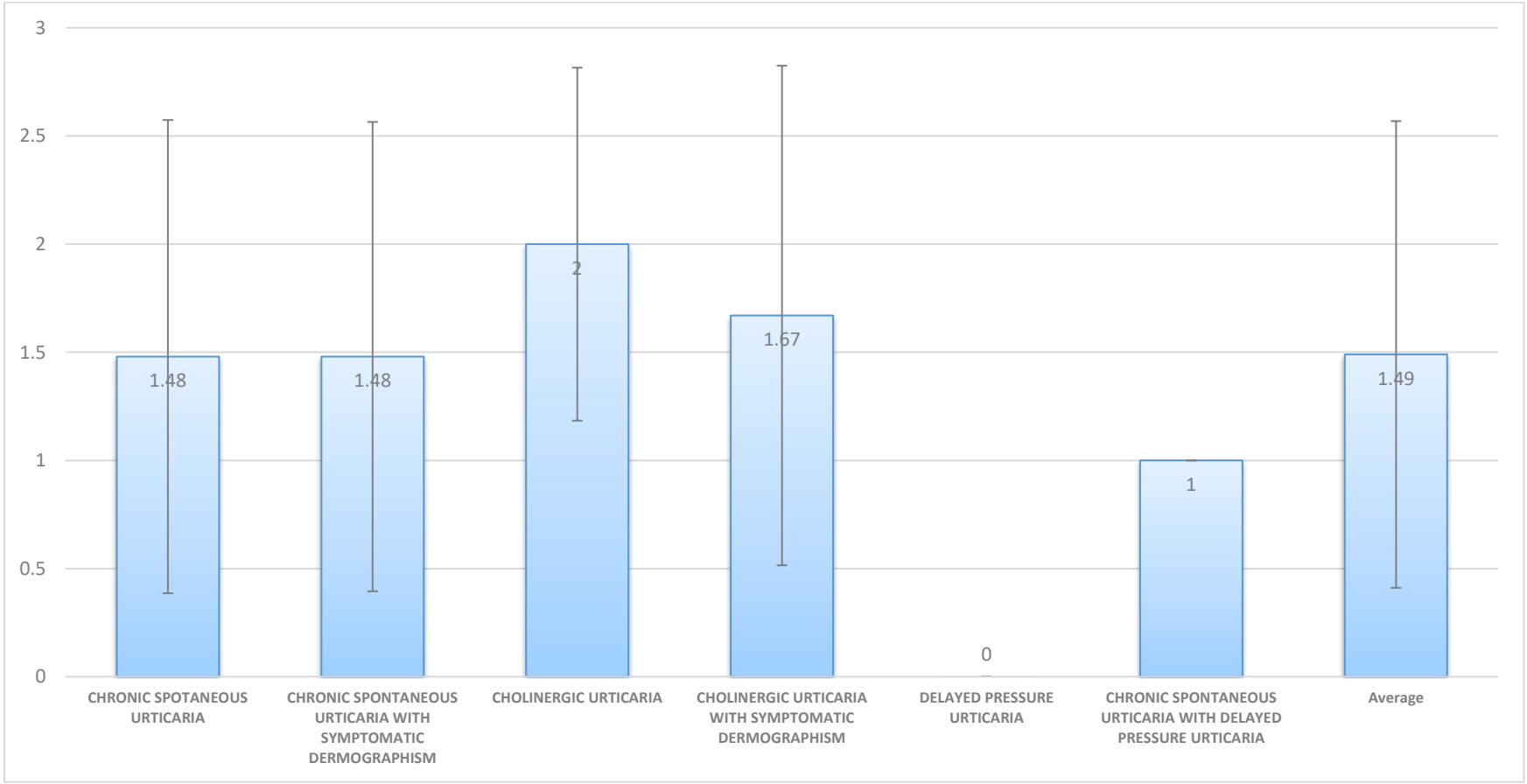


**Figure 20: Co- relation of response to Question 3 with final diagnosis.**

**RESPONSE TO QUESTION 4:**

In the present study,

- The highest mean score for question 4 was seen in cholinergic urticaria (2.40 ± 0.70) followed by cholinergic urticaria with symptomatic dermographism (2) and delayed pressure urticaria (2)
- The lowest mean score was seen in chronic spontaneous urticaria with delayed pressure urticaria (1) **(Table 22 & Figure 21)**

**Table 22: Co- relation of response to Question 4 with final diagnosis.**

| QUESTION 4 | CHRONIC SPOTANEOUS URTICARIA (109) | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM (25) | CHOLINERGIC URTICARIA (10) | CHOLINERGIC URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM (3) | DELAYED PRESSURE URTICARIA (2) | CHRONIC SPONTANEOUS URTICARIA WITH DELAYED PRESSURE URTICARIA (1) | AVERAGE |
|---|---|---|---|---|---|---|---|
| **Minimum Score** | 0 | 0 | 1 | 2 | 2 | 1 | |
| **Maximum Score** | 3 | 3 | 3 | 2 | 2 | 1 | |
| **Mean ± S.D.** | 1.26 ± 0.99 | 1.40 ± 0.96 | 2.40 ± 0.70 | 2 ± 0 | 2 ± 0 | 1 ± 0 | 1.38 ± 0.99 |

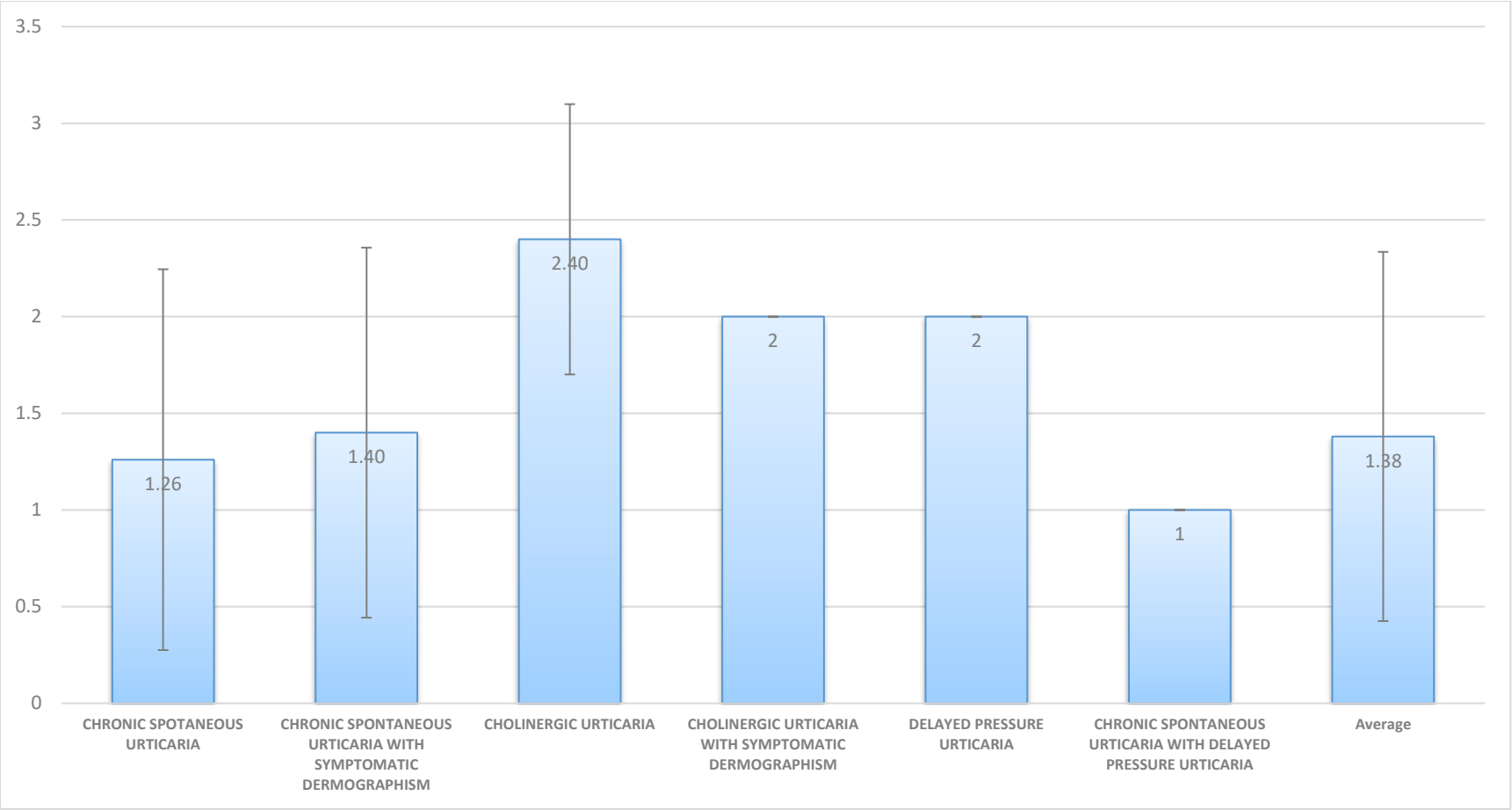


**Figure 21: Co- relation of response to Question 4 with final diagnosis.**

**RESPONSE TO QUESTION 5:**

In the present study,

- The highest mean score for question 5 was seen in delayed pressure urticaria (2) followed by chronic spontaneous urticaria with symptomatic dermographism (1.40 ± 0.87).
- The lowest mean score was seen in cholinergic urticaria with symptomatic dermographism (1) and chronic spontaneous urticaria with delayed pressure urticaria (1) **(Table 23 & Figure 22)**

**Table 23: Co- relation of response to Question 5 with final diagnosis.**

| QUESTION 5 | CHRONIC SPOTANEOUS URTICARIA (109) | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM (25) | CHOLINERGIC URTICARIA (10) | CHOLINERGIC URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM (3) | DELAYED PRESSURE URTICARIA (2) | CHRONIC SPONTANEOUS URTICARIA WITH DELAYED PRESSURE URTICARIA (1) | AVERAGE |
|---|---|---|---|---|---|---|---|
| **Minimum Score** | 0 | 0 | 0 | 1 | 2 | 1 | |
| **Maximum Score** | 3 | 3 | 3 | 1 | 2 | 1 | |
| **Mean±S.D.** | 1.34 ± 0.84 | 1.40 ± 0.87 | 1.20 ± 0.79 | 1 ± 0 | 2 ± 0 | 1 ± 0 | 1.34 ± 0.86 |

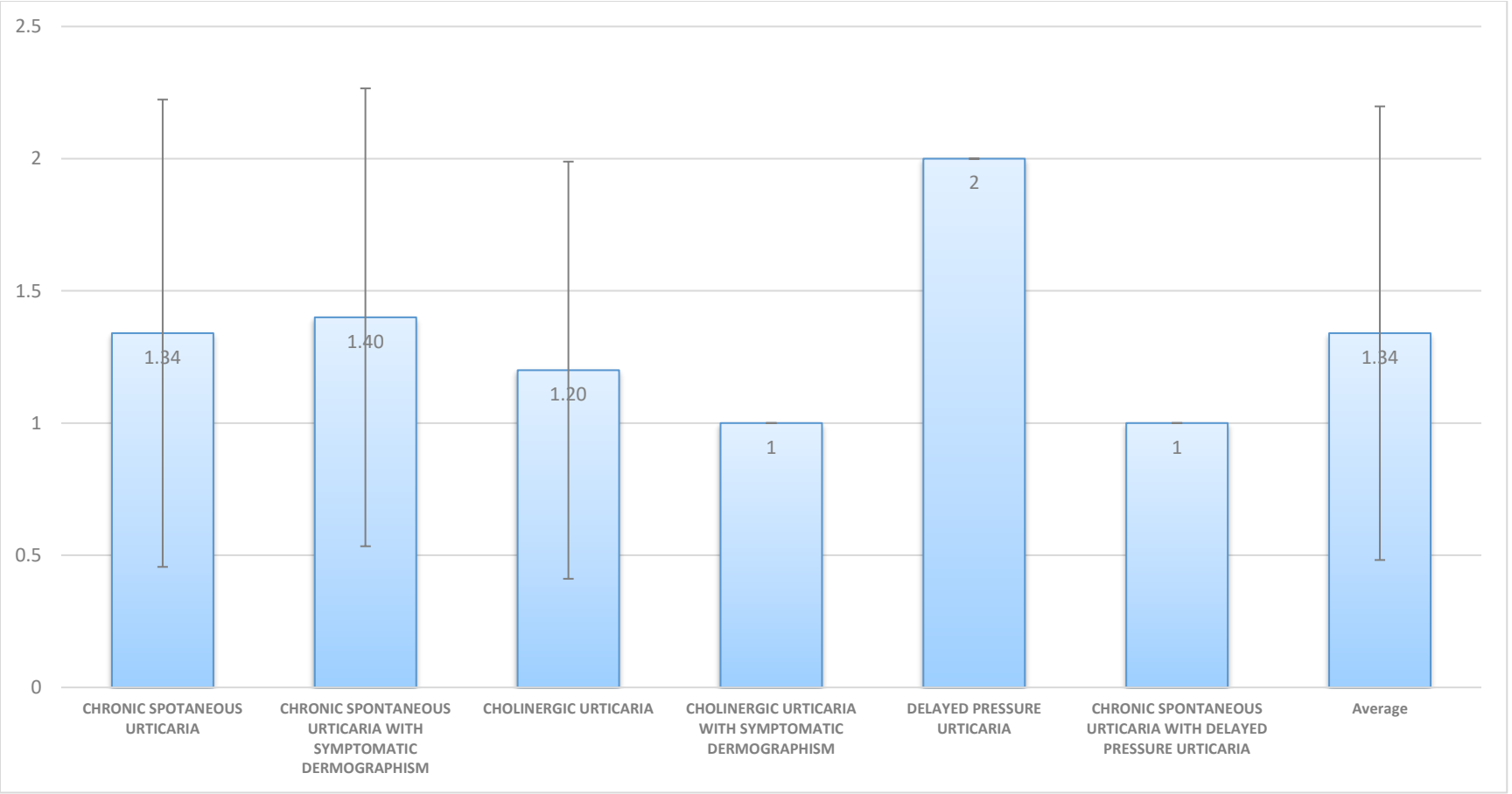


**Figure 22: Co- relation of response to Question 5 with final diagnosis.**

**RESPONSE TO QUESTION 6:**

In the present study,

- The highest mean score for question 6 was seen in delayed pressure urticaria (1.00 ± 1.41) followed by cholinergic urticaria (0.60 ± 0.97)
- The lowest mean score was seen in chronic spontaneous urticaria with delayed pressure urticaria (0) **(Table 24 & Figure 23)**

**Table 24: Co- relation of response to Question 6 with final diagnosis.**

| QUESTION 6 | CHRONIC SPOTANEOUS URTICARIA (109) | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM (25) | CHOLINERGIC URTICARIA (10) | CHOLINERGIC URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM (3) | DELAYED PRESSURE URTICARIA (2) | CHRONIC SPONTANEOUS URTICARIA WITH DELAYED PRESSURE URTICARIA (1) | AVERAGE |
|---|---|---|---|---|---|---|---|
| **Minimum Score** | 0 | 0 | 0 | 0 | 0 | 0 | |
| **Maximum Score** | 3 | 3 | 2 | 1 | 2 | 0 | |
| **Mean±S.D.** | 0.25 ± 0.70 | 0.56 ± 0.96 | 0.60 ± 0.97 | 0.33 ± 0.58 | 1.00 ± 1.41 | 0 ± 0 | 0.33 ± 0.77 |

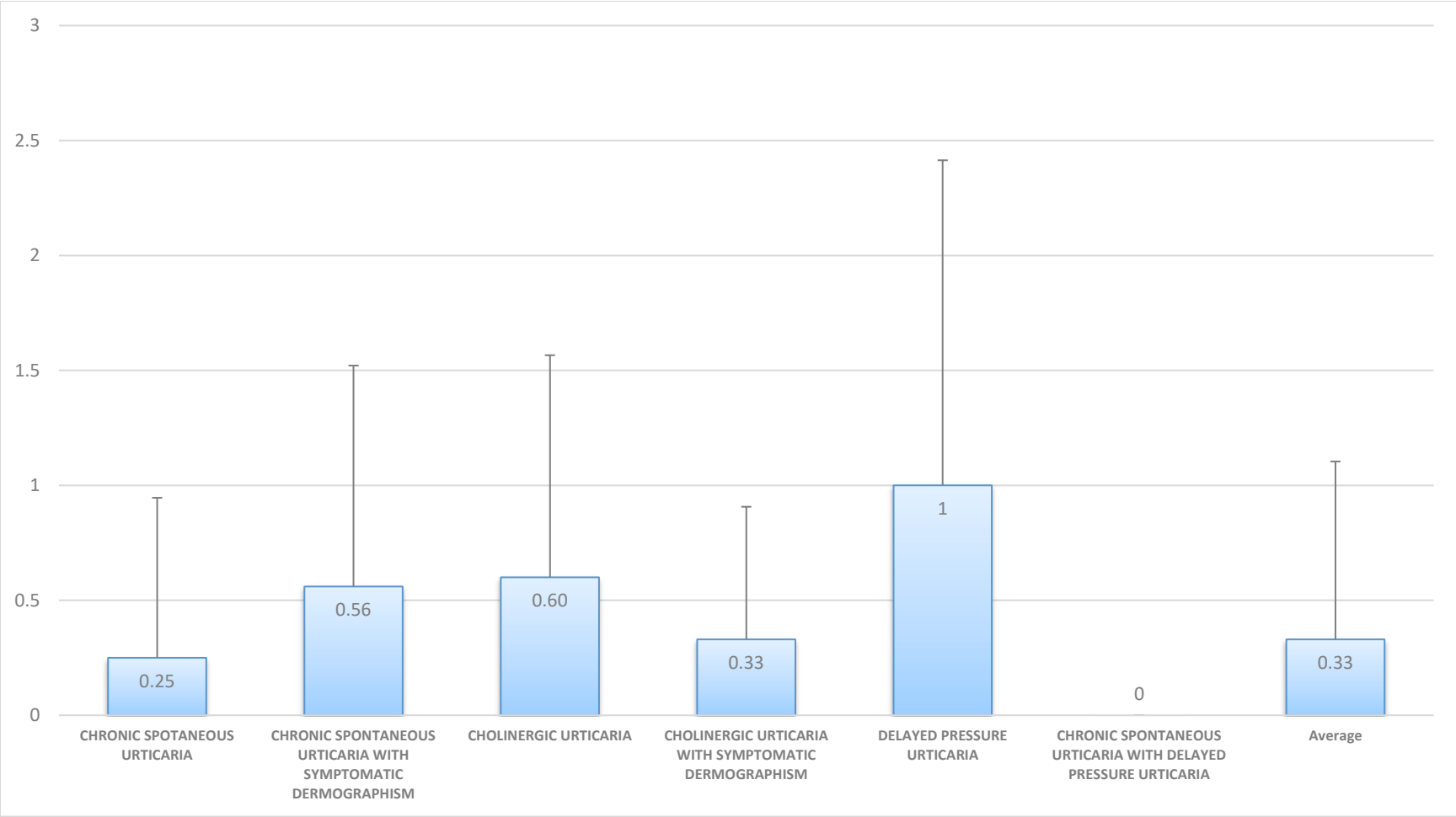


**Figure 23: Co- relation of response to Question 6 with final diagnosis.**

**RESPONSE TO QUESTION 7:**

In the present study,

- The highest mean score for question 7 was seen in cholinergic urticaria (2.20 ± 1.14) followed by chronic spontaneous urticaria with symptomatic dermographism (2.12 ± 0.97)
- The lowest mean score was seen in chronic spontaneous urticaria with delayed pressure urticaria (1) **(Table 25 & Figure 24)**

**Table 25: Co- relation of response to Question 7 with final diagnosis.**

| QUESTION 7 | CHRONIC SPOTANEOUS URTICARIA (109) | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM (25) | CHOLINERGIC URTICARIA (10) | CHOLINERGIC URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM (3) | DELAYED PRESSURE URTICARIA (2) | CHRONIC SPONTANEOUS URTICARIA WITH DELAYED PRESSURE URTICARIA (1) | AVERAGE |
|---|---|---|---|---|---|---|---|
| **Minimum Score** | 0 | 0 | 0 | 1 | 1 | 1 | |
| **Maximum Score** | 3 | 3 | 3 | 3 | 2 | 1 | |
| **Mean ± S.D.** | 1.87 ± 1.02 | 2.12 ± 0.97 | 2.20 ± 1.14 | 2.00 ± 1.00 | 1.50 ± 0.71 | 1 ± 0 | 1.93 ± 1.01 |

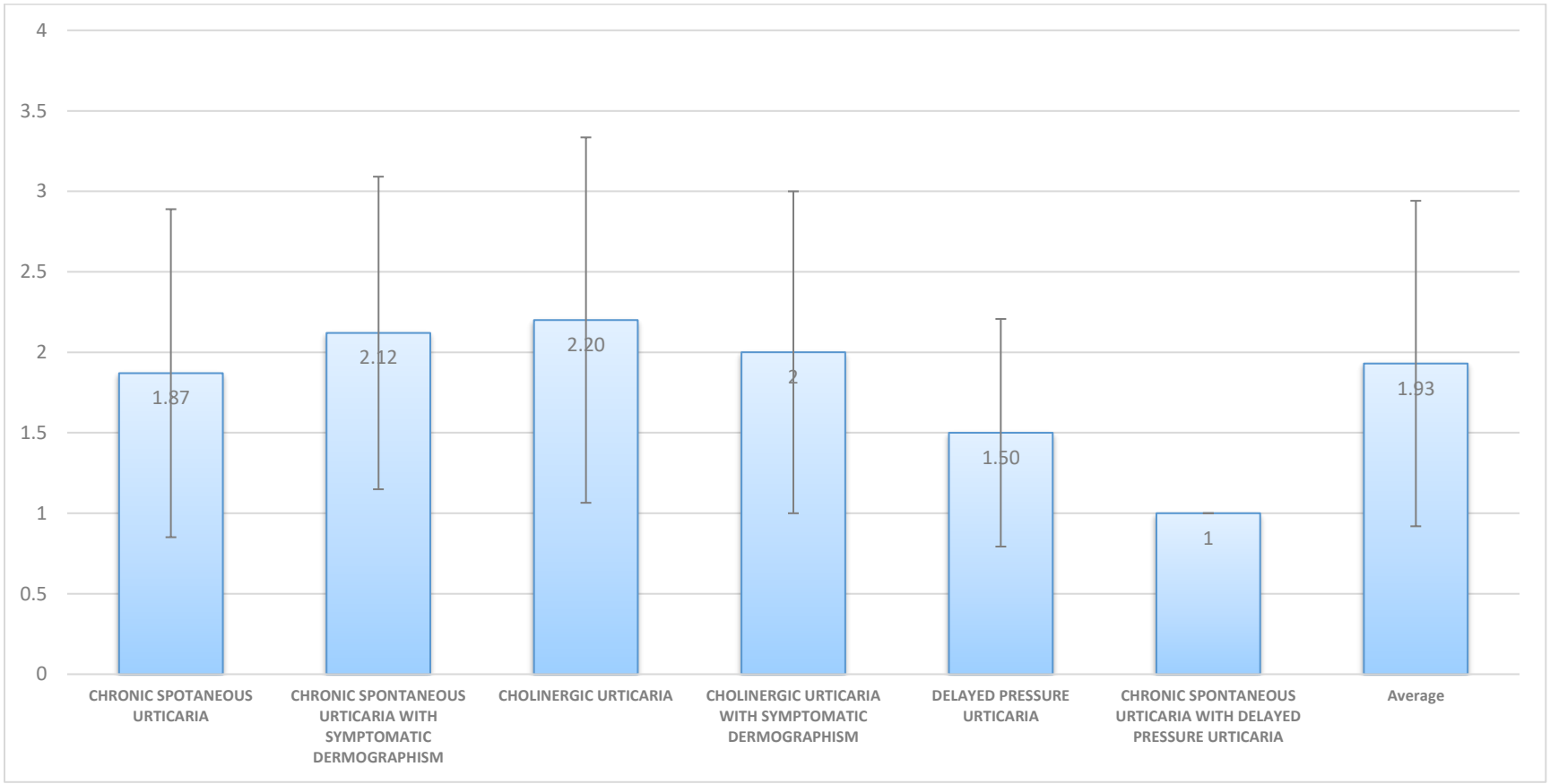


**Figure 24: Co- relation of response to Question 7 with final diagnosis.**

**RESPONSE TO QUESTION 8:**

In the present study,

- The highest mean score for question 8 was seen in cholinergic urticaria with symptomatic dermographism (1) followed by chronic spontaneous urticaria (0.75 ± 0.75).
- The lowest mean score was seen in chronic spontaneous urticaria with delayed pressure urticaria (0) **(Table 26 & Figure 25)**

**Table 26: Co- relation of response to Question 8 with final diagnosis.**

| QUESTION 8 | CHRONIC SPOTANEOUS URTICARIA (109) | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM (25) | CHOLINERGIC URTICARIA (10) | CHOLINERGIC URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM (3) | DELAYED PRESSURE URTICARIA (2) | CHRONIC SPONTANEOUS URTICARIA WITH DELAYED PRESSURE URTICARIA (1) | AVERAGE |
|---|---|---|---|---|---|---|---|
| **Minimum Score** | 0 | 0 | 0 | 1 | 0 | 0 | |
| **Maximum Score** | 2 | 2 | 1 | 1 | 1 | 0 | |
| **Mean±S.D.** | 0.75 ± 0.75 | 0.64 ± 0.70 | 0.70 ± 0.48 | 1 ± 0 | 0.50 ± 0.71 | 0 ± 0 | 0.73 ± 0.71 |

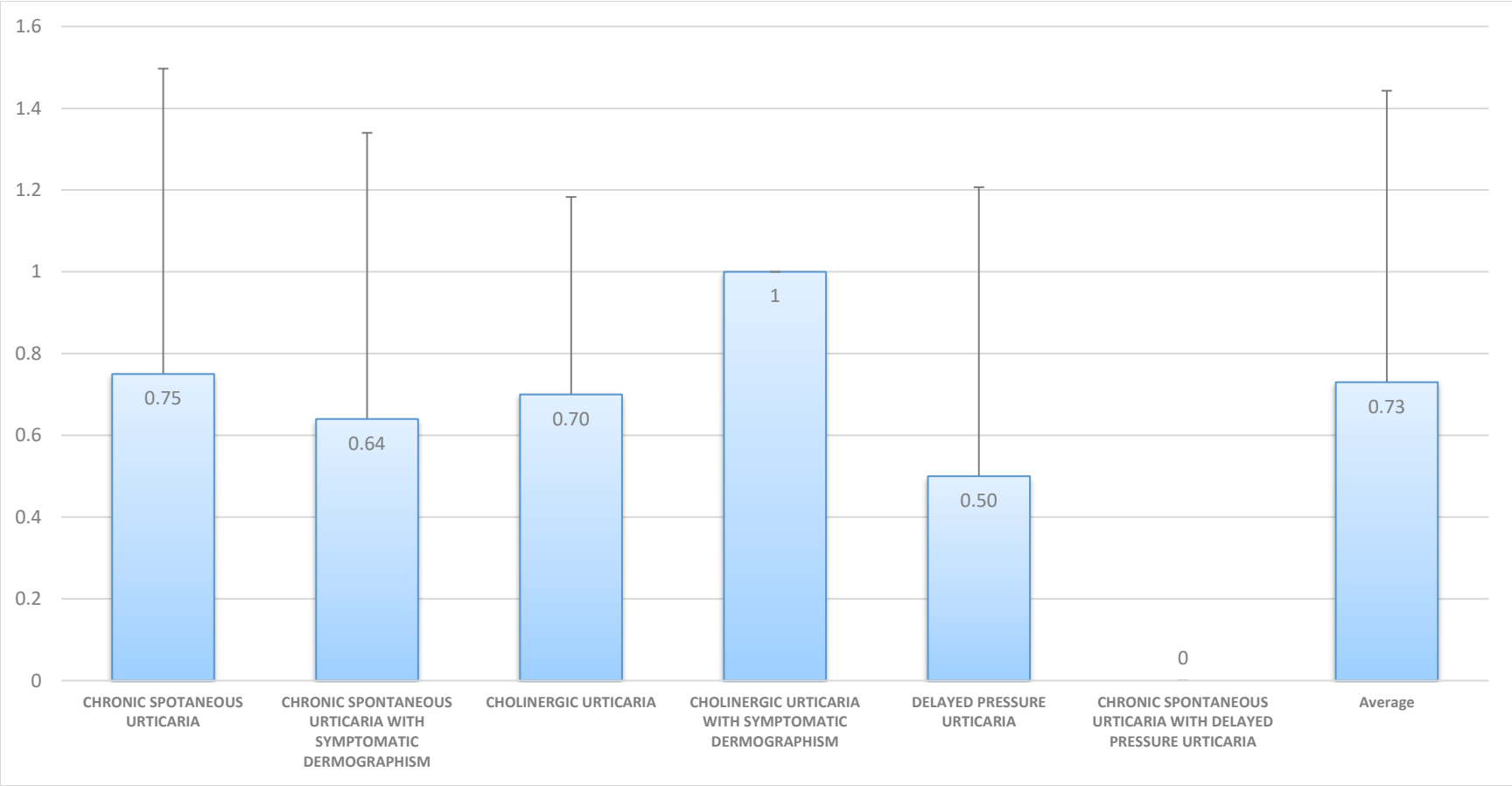


**Figure 25: Co- relation of response to Question 8 with final diagnosis.**

**RESPONSE TO QUESTION 9:**

In the present study,

- The highest mean score for question 9 was seen in delayed pressure urticaria (1.00 ± 1.41) followed by chronic spontaneous urticaria with symptomatic dermographism (0.72 ± 0.84).
- The lowest mean score was seen in chronic spontaneous urticaria with delayed pressure urticaria (0) **(Table 27 & Figure 26)**

**Table 27: Co- relation of response to Question 9 with final diagnosis.**

| QUESTION 9 | CHRONIC SPOTANEOUS URTICARIA (109) | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM (25) | CHOLINERGIC URTICARIA (10) | CHOLINERGIC URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM (3) | DELAYED PRESSURE URTICARIA (2) | CHRONIC SPONTANEOUS URTICARIA WITH DELAYED PRESSURE URTICARIA (1) | AVERAGE |
|---|---|---|---|---|---|---|---|
| **Minimum Score** | 0 | 0 | 0 | 0 | 0 | 0 | |
| **Maximum Score** | 2 | 2 | 2 | 1 | 2 | 0 | |
| **Mean±S.D.** | 0.53 ± 0.68 | 0.72 ± 0.84 | 0.60 ± 0.70 | 0.33 ± 0.58 | 1.00 ± 1.41 | 0 ± 0 | 0.57 ± 0.71 |

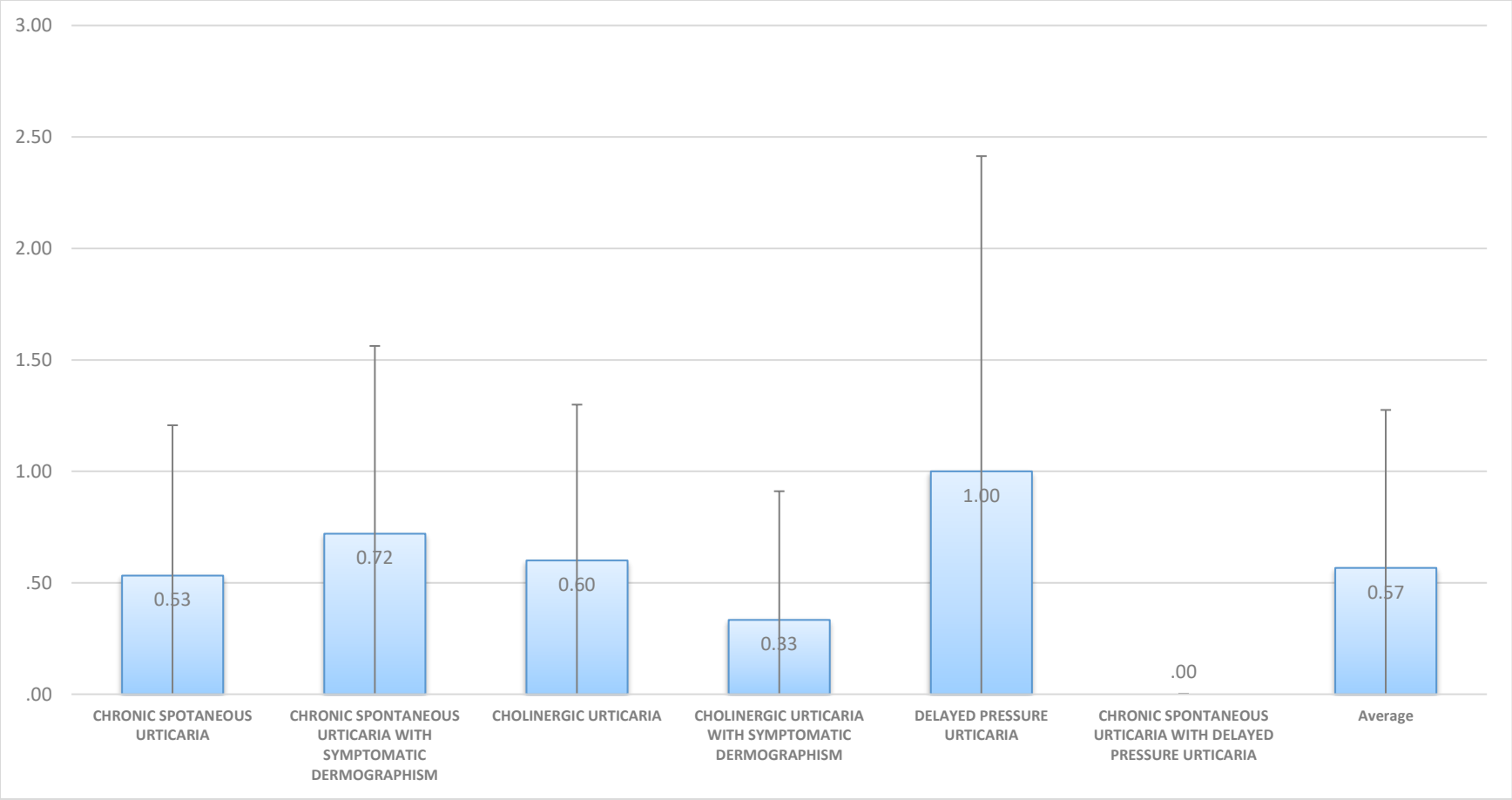


**Figure 26: Co- relation of response to Question 9 with final diagnosis.**

**RESPONSE TO QUESTION 10:**

In the present study,

- The highest mean score was seen in chronic spontaneous urticaria (1.09 ± 1.14) followed by chronic spontaneous urticaria with symptomatic dermographism (1.08 ± 0.99)
- The lowest mean score was seen in delayed pressure urticaria (0) and chronic spontaneous urticaria with delayed pressure urticaria (0) **(Table 28 & Figure 27)**

**Table 28: Co- relation of response to Question 10 with final diagnosis.**

| QUESTION 10 | CHRONIC SPOTANEOUS URTICARIA (109) | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM (25) | CHOLINERGIC URTICARIA (10) | CHOLINERGIC URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM (3) | DELAYED PRESSURE URTICARIA (2) | CHRONIC SPONTANEOUS URTICARIA WITH DELAYED PRESSURE URTICARIA (1) | AVERAGE |
|---|---|---|---|---|---|---|---|
| **Minimum Score** | 0 | 0 | 0 | 0 | 0 | 0 | |
| **Maximum Score** | 3 | 3 | 3 | 1 | 0 | 0 | |
| **Mean±S.D.** | 1.09 ± 1.14 | 1.08 ± 0.99 | 0.40 ± 0.97 | 0.33 ± 0.58 | 0 ± 0 | 0 ± 0 | 1.01±1.10 |

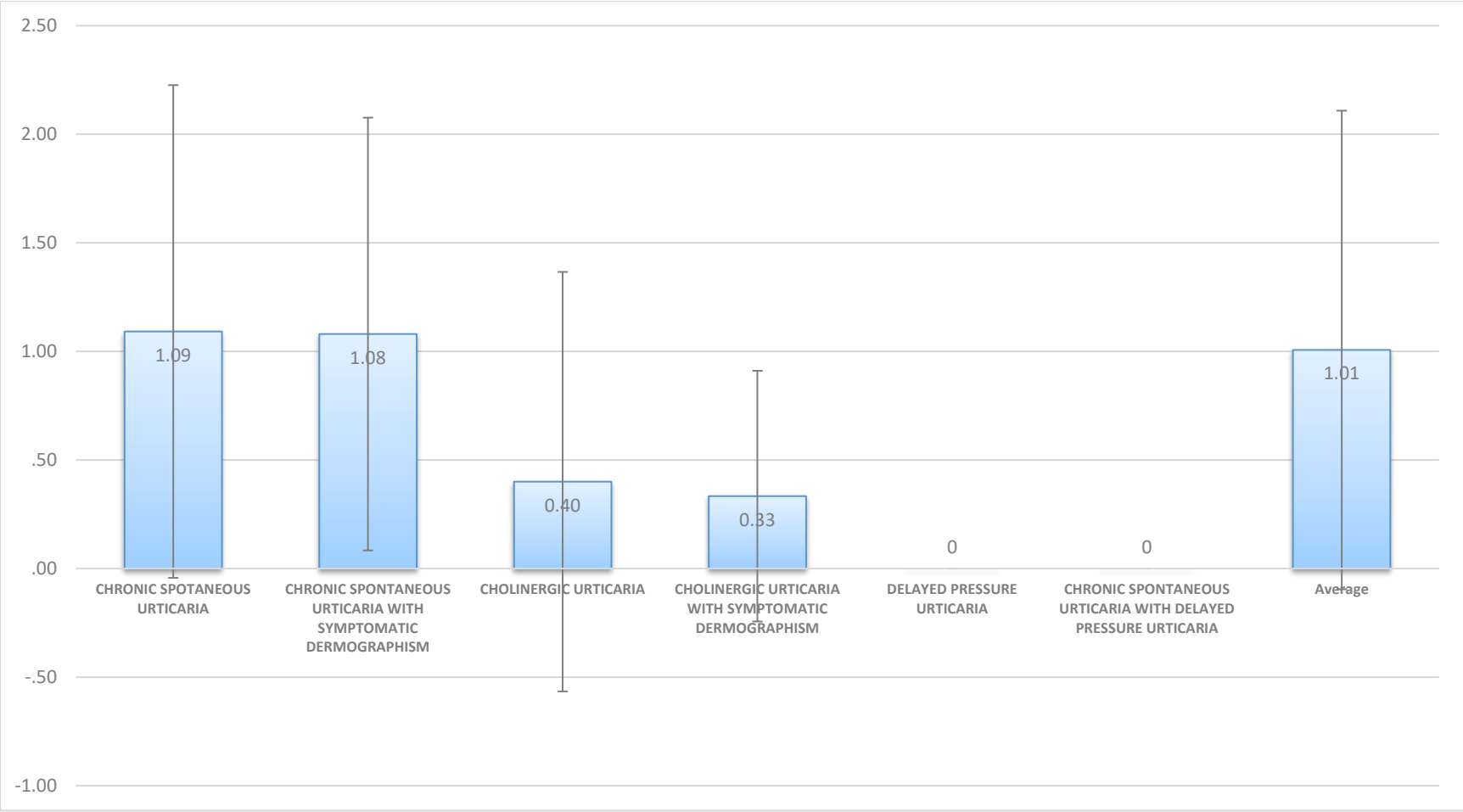


**Figure 27: Co- relation of response to Question 10 with final diagnosis.**

## COMPARISON OF TOTAL DLQI SCORE AMONG DIFFERENT TYPES OF URTICARIA

In the present study,

- Maximum DLQI score (13.60 $\pm$ 4.48) was seen in patients of cholinergic urticaria followed by chronic spontaneous urticaria with symptomatic dermographism (mean DLQI of 13.24 $\pm$ 5.27) while minimum DLQI score (6.0) was seen in patients of chronic spontaneous urticaria with delayed pressure urticaria.
- This indicates that the quality of life was severely impaired in patients of cholinergic urticaria followed by chronic spontaneous urticaria with symptomatic dermographism while it was moderately impaired in patients of chronic spontaneous urticaria with delayed pressure urticaria. **(Table 29 & Figure 28)**

**Table 29: Comparison of Total DLQI Score among different types of urticaria. N=150**

| TOTAL DLQI SCORE | CHRONIC SPOTANEOUS URTICARIA (109) | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM (25) | CHOLINERGIC URTICARIA (10) | CHOLINERGIC URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM (3) | DELAYED PRESSURE URTICARIA (2) | CHRONIC SPONTANEOUS URTICARIA WITH DELAYED PRESSURE URTICARIA (1) | AVERAGE |
|---|---|---|---|---|---|---|---|
| **Minimum score** | 2 | 3 | 7 | 9 | 10 | 6 | |
| **Maximum score** | 24 | 20 | 23 | 16 | 11 | 6 | |
| **Mean DLQI score± S.D.** | 12.32 ± 5.82 | 13.24 ± 5.27 | 13.60 ± 4.48 | 12.33 ± 3.51 | 10.50±0.71 | 6.00 ± 0 | 12.49±5.56 |

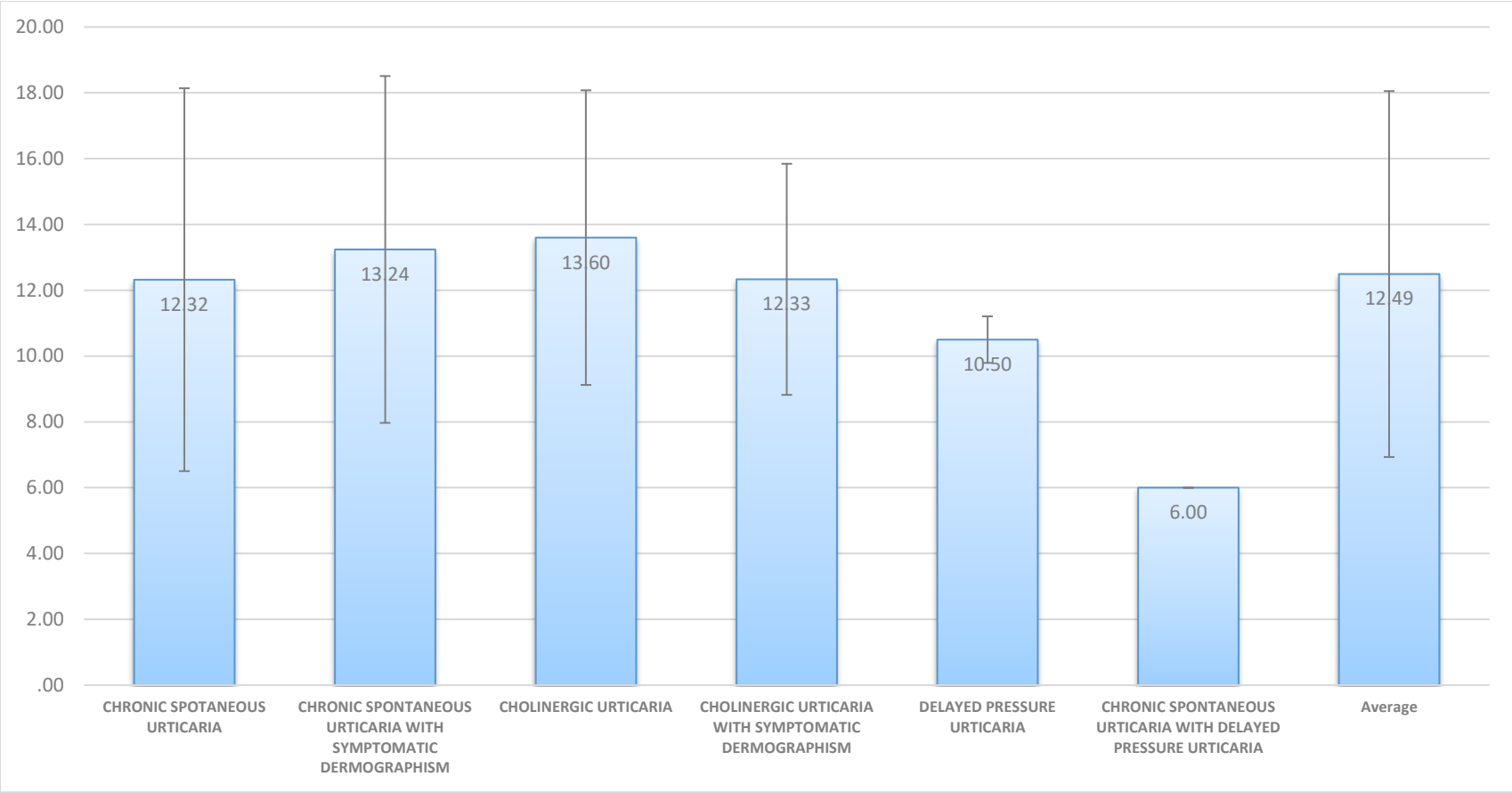


**Figure 28: Comparison of Total DLQI Score among different types of urticaria. N=150**

## COMPARISON OF MEAN DLQI SCORE IN MALES AND FEMALES:

- In the present study, the mean DLQI score was higher in females ($12.84 \pm 5.74$) than in males ($11.91 \pm 5.24$), though it was statistically insignificant (p value= 0.324).
- Out of all the 10 questions, the difference in mean scores between males and females for Question 2 and 3 was statistically significant, p value being 0.003 and 0.014 respectively. **(Table 30 & Figure 29)**

**Table 30: Comparison of Mean DLQI Score between males and females:**

| | **Female (94)** | | **Male (56)** | | **p-value** |
|---|---|---|---|---|---|
| | **Mean** | **SD** | **Mean** | **SD** | |
| **Age (Years)** | 39.71 | 13.14 | 36.48 | 12.09 | 0.136 |
| **Duration (Months)** | 12.45 | 25.30 | 12.55 | 16.83 | 0.979 |
| **Q1** | 2.35 | 0.73 | 2.34 | 0.58 | 0.918 |
| **Q2** | 1.61 | 1.14 | 1.05 | 1.02 | 0.003 |
| **Q3** | 1.66 | 1.10 | 1.21 | 0.99 | 0.014 |
| **Q4** | 1.35 | 1.02 | 1.43 | 0.93 | 0.644 |
| **Q5** | 1.38 | 0.83 | 1.27 | 0.90 | 0.428 |
| **Q6** | 0.29 | 0.71 | 0.41 | 0.87 | 0.347 |
| **Q7** | 1.93 | 1.07 | 1.93 | 0.91 | 0.986 |
| **Q8** | 0.76 | 0.76 | 0.68 | 0.64 | 0.526 |
| **Q9** | 0.55 | 0.70 | 0.59 | 0.73 | 0.764 |
| **Q10** | 1.01 | 1.09 | 1.00 | 1.13 | 0.955 |
| **DLQI Score** | 12.84 | 5.74 | 11.91 | 5.24 | 0.324 |

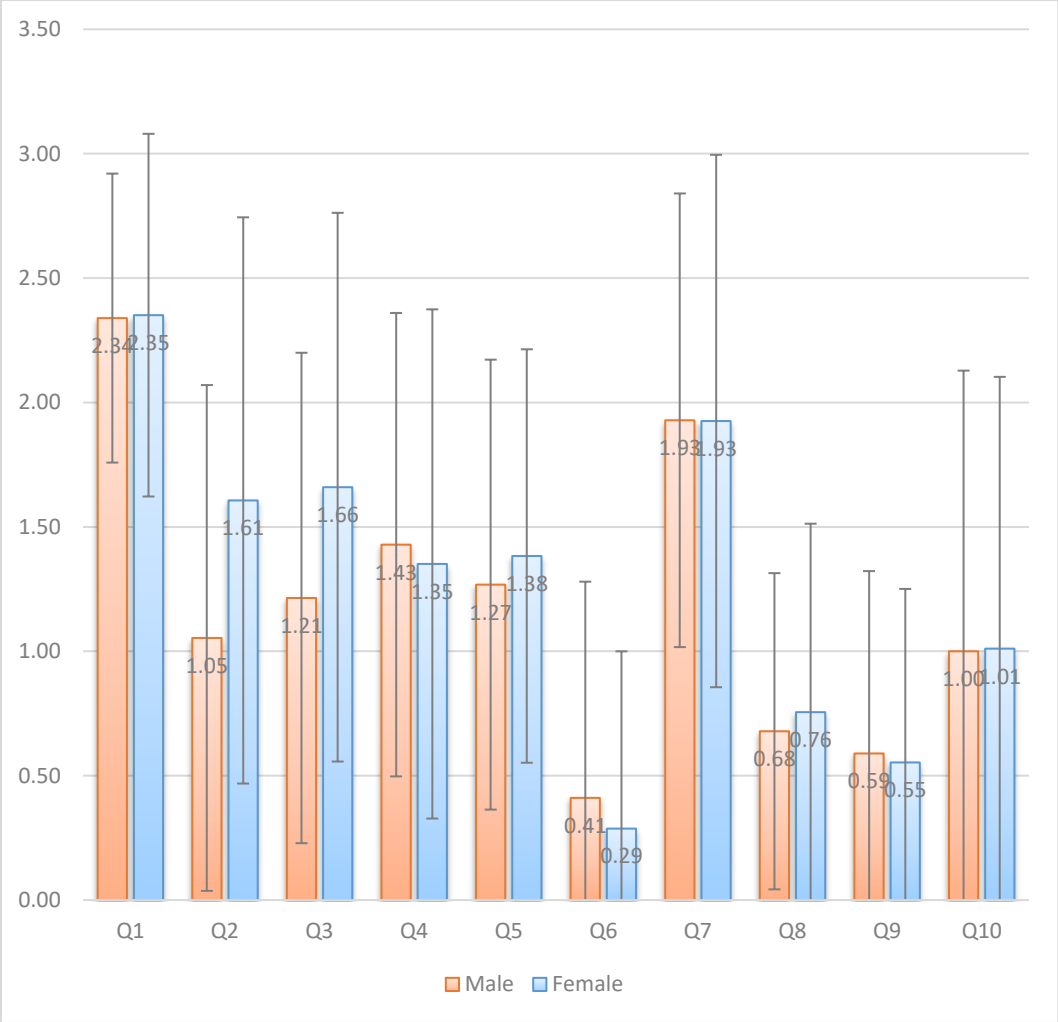


**Figure 29: Comparison of Mean DLQI Score between males and females.**

**CO-RELATION OF MEAN DLQI SCORE IN SUBDOMAINS OF FINAL DIAGNOSIS:**

In the present study,

- In the subdomain of symptoms & feelings, the highest mean DLQI score was seen in chronic spontaneous urticaria with symptomatic dermographism (3.88 ± 1.33) while minimum mean DLQI score was seen in chronic spontaneous urticaria with delayed pressure urticaria (2).
- In the subdomain of daily activities, the highest mean DLQI score was seen in cholinergic urticaria (4.40 ± 1.35) while minimum mean DLQI score was seen in delayed pressure urticaria (2) and chronic spontaneous urticaria with delayed pressure urticaria (2).
- In the subdomain of leisure, the highest mean DLQI score was seen in delayed pressure urticaria (3.00 ± 1.41) while the minimum mean DLQI score was seen in chronic spontaneous urticaria with delayed pressure urticaria (1).
- In the subdomain of work & school, the highest mean DLQI score was seen in cholinergic urticaria (2.20 ± 1.14) while the minimum mean DLQI score was seen in chronic spontaneous urticaria with delayed pressure urticaria (1).
- In the subdomain of personal relationships, the highest mean DLQI score was seen in delayed pressure urticaria (1.50 ± 0.71) while the minimum mean DLQI score was seen in chronic spontaneous urticaria with delayed pressure urticaria (0).
- In the subdomain of treatment, the highest mean DLQI score was seen in chronic spontaneous urticaria (1.09 ± 1.14) while the minimum mean DLQI score was seen in delayed pressure urticaria (0) and chronic spontaneous urticaria with delayed pressure urticaria (0)
- The co-relation of subdomains with final diagnosis was statistically insignificant (p value >0.05) **(Table 31 & Figure 30)**

**Table 31: Co-relation of mean DLQI score in subdomains of final diagnosis.**

| | CHRONIC SPOTANEOUS URTICARIA (109) | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM (25) | CHOLINERGIC URTICARIA (10) | CHOLINERGIC URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM (3) | DELAYED PRESSURE URTICARIA (2) | CHRONIC SPONTANEOUS URTICARIA WITH DELAYED PRESSURE URTICARIA (1) | P VALUE |
|---|---|---|---|---|---|---|---|
| **Symptoms & Feelings** | 3.76 ± 1.63 | 3.88 ±1.33 | 3.70 ± 1.16 | 3.67 ± 1.16 | 2.50 ±0.71 | 2 | 0.734 |
| **Daily activities** | 2.73 ±1.68 | 2.88 ±1.69 | 4.40 ±1.35 | 3.67 ±1.16 | 2.00 ± 0 | 2 | 0.061 |
| **Leisure** | 1.59 ± 1.18 | 1.96 ± 1.34 | 1.80 ±1.14 | 1.33 ±0.58 | 3.00 ± 1.41 | 1 | 0.409 |
| **Work & school** | 1.87 ± 1.02 | 2.12 ± 0.97 | 2.20 ±1.14 | 2.00 ±1.00 | 1.50 ± 0.71 | 1 | 0.678 |
| **Personal relationships** | 1.28 ± 1.20 | 1.36 ± 1.35 | 1.30 ± 0.95 | 1.33 ± 0.58 | 1.50 ± 0.71 | 0 | 0.935 |
| **Treatment** | 1.09 ± 1.14 | 1.08 ± 0.99 | 0.40 ± 0.97 | 0.33 ± 0.58 | 0 | 0 | 0.191 |

# DISCUSSION

Urticaria is one of the most common presenting complaint in dermatology while few patients present in emergency. Characterized by pruritic weals or angioedema or both lasting for 6 weeks or longer, chronic urticaria is a debilitating skin condition that has a profound effect on the patient's quality of life.

The present study comprised of 150 clinically diagnosed patients of chronic urticaria, who were further sub-classified into spontaneous or inducible types and their QoL was determined by using the dermatology life quality index (DLQI) score.

**AGE INCIDENCE:**

In our study, the mean age of incidence was 38.51 ± 12.81 years, comparable with the studies carried out by Poon et al [236], Kang et al [237] and Ue et al [238] while Liu et al [239] and Paudel et al [44] noticed 32.94 ± 0.70 and 32.86 ± 1.05 years respectively. This indicates that chronic urticaria is more common in middle age group.

**Table 32: Comparison of mean age of incidence among different studies.**

| | **Poon et al, 1999** [236] | **Godse, 2006** [235] | **Kang et al, 2009** [237] | **Ue et al, 2011** [238] | **Liu et al, 2011** [239] | **Dias et al, 2016** [34] | **Itakura et al, 2018** [240] | **Paudel et al, 2020** [44] | **Present study** |
|---|---|---|---|---|---|---|---|---|---|
| **Mean age of study population (in years)** | 37·6±10·3 | 43 | 37.3±15.3 | 39.8±12 | 32.94±0.70 | 46 | 45.2±11.3 | 32.86±1.05 | 38.51±12.81 |

**GENDER:**

In this study, females (62.7%) were predominantly affected as compared to males (37.3%) with male to female ratio being 1:1.68. This was comparable with the studies carried out by Liu et al [239], Itakura et al [240] and Paudel et al [44] while Godse [235] found male predominance with the male to female ratio of 1.94:1 in his study.

**Table 33: Comparison of gender among different studies.**

| | **Poon et al, 1999 [236]** | **Godse, 2006 [235]** | **Kang et al, 2009 [237]** | **Ue et al, 2011 [238]** | **Liu et al, 2011 [239]** | **Dias et al, 2016 [34]** | **Itakura et al, 2018 [240]** | **Paudel et al, 2020 [44]** | **Present study** |
|---|---|---|---|---|---|---|---|---|---|
| **Male (%)** | 44 | 66 | 45.4 | 27.4 | 36.65 | 14.28 | 40.8 | 34.48 | 37.3 |
| **Female (%)** | 56 | 34 | 54.6 | 72.6 | 63.35 | 85.72 | 59.2 | 65.52 | 62.7 |
| **Male: Female** | 1:1.27 | 1.94: 1 | 1:1.20 | 1:2.64 | 1:1.72 | 1:6 | 1:1.45 | 1:1.90 | 1:1.68 |

**DISEASE DURATION:**

In the present study, the mean duration of the disease was 12.49 ± 22.455 months which was comparable to the study conducted by Kang et al [237], where the mean duration of the disease was 18.60 ± 30 months.

**Table 34: Comparison of mean disease duration among different studies.**

| | **Kang et al, 2009 [237]** | **Ue et al, 2011 [238]** | **Itakura et al, 2018 [240]** | **Present study** |
|---|---|---|---|---|
| **Disease Duration** | 18.60±30 months | 43.5±50.8 months | 10.7±12.1 years | 12.49±22.46 months |

## COMPARISON OF SUBTYPES OF CHRONIC URTICARIA:

In our study, the most common urticaria seen was chronic spontaneous urticaria (CSU) followed by CSU with symptomatic dermographism which was comparable with the study conducted by Kang et al [237] where the most common urticaria seen was chronic idiopathic urticaria (CIU) followed by CIU with delayed pressure urticaria.

Poon et al [236] noticed Chronic idiopathic urticaria with or without angioedema (CIU/A) to be the most common type followed by symptomatic dermographism. Dias et al [34] also found CSU alone to be the most common type of urticaria in his study.

Liu et al [239] and Paudel et al [44] did not sub- classify chronic urticaria in their studies.

**Table 35: Comparison of subtypes of urticaria found in different studies.**

| | Poon et al, 1999 [236] | Godse, 2006 [235] | Kang et al, 2009 [237] | Ue et al, 2011 [238] | Liu et al, 2011 [239] | Dias et al, 2016 [34] | Paudel et al, 2020 [44] | Present study |
|---|---|---|---|---|---|---|---|---|
| **Types of Diagnosis** | • CIU/A<br>• CIU/A with delayed pressure urticaria<br>• CIU/A with symptomatic dermographism<br>• Symptomatic dermographism<br>• Cholinergic urticaria<br>• Cold urticaria<br>• Urticarial vasculitis<br>• Hereditary angio-oedema<br>• Acute/intermittent urticaria | • Chronic urticaria<br>• Delayed pressure urticaria | • Chronic idiopathic urticaria (CIU)<br>• CIU with cholinergic urticaria<br>• CIU with delayed pressure urticaria (DPU)<br>• Cholinergic urticaria with DPU | • Chronic ordinary urticaria<br>• Physical urticaria<br>• Mixed urticaria | • Chronic urticaria | • Chronic spontaneous urticaria (CSU) Alone<br>• Associated with inducible Urticaria<br>• Autoimmune urticaria Alone<br>• Associated with inducible Urticaria<br>• Inducible urticaria alone | • Chronic urticaria | • Chronic spontaneous urticaria (CSU)<br>• CSU with symptomatic dermographism<br>• Cholinergic urticaria<br>• Cholinergic urticaria with symptomatic dermographism<br>• DPU<br>• CSU with DPU |

## CHRONIC SPONTANEOUS URTICARIA AND DLQI SCORE:

In this study, the mean DLQI score of CSU was 12.32 ± 5.82 indicating severe impairment of QoL. This was in contrast to the study carried out by

Poon et al [236] where the mean DLQI score for CIU/A was 25% ± 24% (≈ 7.5 ± 7.2) indicating moderately impaired QoL.

**CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM AND DLQI SCORE:**

In our study, the mean DLQI score for CSU with symptomatic dermographism was 13.24 ± 5.27 which indicated that the QoL was severely impaired in this category. This was in contrast to the study conducted by Poon et al [236] where the mean DLQI score for CIU/A with concurrent symptomatic dermographism was 25% ± 15% (≈7.5 ± 4.5) which indicated that the QoL was moderately impaired.

**CHOLINERGIC URTICARIA AND DLQI SCORE:**

In the present study, the mean DLQI for cholinergic urticaria was 13.60 ± 4.48 which was comparable with the study conducted by Poon et al [236] where the mean DLQI score for cholinergic urticaria was 50% ± 34% (≈ 15± 10.2), indicating severe impairment in QoL of these patients. In both the studies, cholinergic urticaria had the highest maximum mean DLQI score suggesting that the QoL was impaired to a greater extent in cholinergic urticaria than the other subtypes.

**CHOLINERGIC URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM AND DLQI SCORE:**

In our study, the mean DLQI score for cholinergic urticaria with symptomatic dermographism was 12.33 ± 3.51 which indicated severe impairment of QoL which was not studied in other similar studies.

**DELAYED PRESSURE URTICARIA AND DLQI SCORE:**

In this study, the mean DLQI score for delayed pressure urticaria was 10.50 ± 0.71 which indicated severe impairment of QoL. This was comparable with the study conducted by Godse [235] wherein 3 patients of delayed pressure urticaria had DLQI score of more than 16 indicating severe impairment of QoL.

**CHRONIC SPONATNEOUS URTICARIA WITH DELAYED PRESSURE URTICARIA AND DLQI SCORE:**

In our study, the mean DLQI score for CSU with delayed pressure urticaria was 6 ± 0, indicating moderate impairment of QoL. This was in contrast to the study conducted by Poon et al [236] where the mean DLQI score for CIU/A with delayed pressure urticaria was 43% ± 23% (≈ 12.9 ± 6.9) indicating severe impairment of QoL.

**COMPARISON OF AVERAGE DLQI SCORE:**

In the present study, the average DLQI score was 12.49 ± 5.56 which was comparable to the study conducted by Ue et al [238] where the average score was 10.4 ± 7.7 indicating severe impairment in QoL. On the other hand, the studies conducted by Poon et al [236], Godse [235], Liu et al [239] and Paudel et al [44] showed moderate impairment of QoL.

**Table 36: Comparison of average DLQI score among different studies.**

| | **Poon et al, 1999 [236]** | **Godse, 2006 [235]** | **Ue et al, 2011 [238]** | **Liu et al, 2011 [239]** | **Itakura et al, 2018 [240]** | **Paudel et al, 2020 [44]** | **Present study** |
|---|---|---|---|---|---|---|---|
| **Average DLQI Score** | 28%±24% (≈8.4±7.2) | 7.16 | 10.4±7.7 | 9.93±0.46 | 4.8±5.1 | 8.30±0.55 | 12.49±5.56 |

**COMPARISON OF DLQI SCORE BETWEEN MALES AND FEMALES:**

In this study, the average DLQI score in females (12.84 ± 5.74) was higher as compared to males (11.91 ± 5.24) though it was statistically insignificant (p value= 0.324) which was comparable to the study carried out by Liu et al [239] (p value= 0.08). On the contrary, Poon et al [236] and Paudel et al [44], concluded that the average DLQI score was higher in males as compared to females.

In our study, the QoL was severely impaired in both males and females which was in contrast to the study carried out by Liu et al [239] where the QoL was moderately impaired in males and severely impaired in females. In the study conducted by Poon et al [236], both males and females had moderate impairment of QoL while Paudel et al [44] concluded severe impairment of QoL in males and moderate impairment of QoL in females.

On further detailed analysis of questions, it was seen that in our study, the difference in mean scores of DLQI between males and females for Question 2 and 3 was statistically significant, p value being 0.003 and 0.014 respectively. This was in contrast to the study carried out by Paudel et al [44], in which statistically significant difference in mean scores in males vs females was seen for Question 6 to 10, p value being 0.001, 0.001, 0.003, 0.019 and 0.033 respectively.

**Table 37: Comparison of average DLQI score between males and females among different studies.**

| | **Poon et al, 1999 [236]** | **Liu et al, 2011 [239]** | **Paudel et al, 2020 [44]** | **Present study** |
|---|---|---|---|---|
| **Average DLQI score in Males** | 31%±25% (≈9.3±7.5) | 8.88±0.77 | 10.51±1.1 | 11.91±5.24 |
| **Average DLQI score in Females** | 26%±23% (≈7.8±6.9) | 10.54±0.58 | 7.15±0.58 | 12.84±5.74 |

# SUMMARY AND CONCLUSION

The present study was conducted to study the quality of life in patients of chronic urticaria by determining the type of urticaria and correlating it with the Dermatology Life Quality Index (DLQI) score. A total of one hundred and fifty (150) clinically diagnosed patients of chronic urticaria were taken. A detailed history and dermatological examination was carried out. The observations and results were tabulated and graphically represented. The summary of observations is as follows:

- Maximum number of patients were in the age group of 31- 40 years (32.7%). The mean age was 38.51 $\pm$ 12.81 years.
- 94 patients were females while 56 were males indicating that females were predominantly affected.
- The minimum duration of the disease was 2 months while maximum was 20 years. The mean duration was 12.49 $\pm$ 22.456 months.
- The most common aggravating factor was skin stroking which was present in 18.66% patients followed by sweat which was present in 6% of patients.
- According to the chief complaints, presence/ absence of aggravating factors and local examination findings, 109 patients were diagnosed as chronic spontaneous urticaria (CSU), 25 patients as CSU with symptomatic dermographism, 10 patients as cholinergic urticaria, 3 patients as cholinergic urticaria with symptomatic dermographism, 2 patients as delayed pressure urticaria and 1 patient as CSU with delayed pressure urticaria.
- Female preponderance was seen in CSU, CSU with symptomatic dermographism and CSU with delayed pressure urticaria while male preponderance was seen in cholinergic urticaria, cholinergic urticaria with symptomatic dermographism and delayed pressure urticaria.

- The minimum DLQI score for CSU was 2 while the maximum score was 24. The mean DLQI score was 12.32 ± 5.82 indicating severe impairment of quality of life (QoL)
- The minimum DLQI score for CSU with symptomatic dermographism was 3 while the maximum score was 20. The mean DLQI score was 13.24 ± 5.27 indicating severe impairment of QoL.
- The minimum DLQI score for cholinergic urticaria was 7 while the maximum score was 23. The mean DLQI score was 13.60 ± 4.48 indicating severe impairment of QoL.
- The minimum DLQI score for cholinergic urticaria with symptomatic dermographism was 9 while the maximum score was 16. The mean DLQI score was 12.33 ± 3.51 indicating severe impairment of QoL.
- The minimum DLQI score for delayed pressure urticaria was 10 while the maximum score was 11. The mean DLQI score was 10.50 ± 0.71 indicating severe impairment of QoL.
- The mean DLQI score for CSU with delayed pressure urticaria was 6 indicating moderate impairment of QoL.
- The maximum impairment of QoL was seen in patients of cholinergic urticaria while minimum impairment of QoL was seen in patients of CSU with delayed pressure urticaria.
- The mean DLQI score was higher in females (12.84 ± 5.74) as compared to males (11.91 ± 5.24), though it was statistically insignificant (p value= 0.324)
- Out of all the 10 questions in DLQI questionnaire, the difference in mean scores between males and females for Question 2 and 3 was statistically significant, p value being 0.003 and 0.014 respectively.

## CONCLUSION:

In the era of modern medicine, stress is laid upon patient's perception of his/ her disease. To understand this, various tools have been formulated to determine the effect of a disease on patient's QoL.

In this study, we used Dermatology Life Quality Index to determine the QoL of patients suffering from chronic urticaria. It helps to give the treating physician an overview of how much the patient had been suffering apart from what he can see in the clinic and therefore tailor the treatment according to the patient. Not only this, it also indicates the efficacy of the treatment being given.

In the present study, we found that both spontaneous and inducible urticaria significantly alter the QoL. Therefore, these patients require better physician understanding and aggressive treatment modalities.

Furthermore in future, better understanding of pathogenesis is needed so that better treatment modalities can be developed to improve the QoL in patients with chronic urticaria.

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**Weals present on the arm**

**Weals present on back**

**Weals present on leg**

**Weals present on arm**

**Weals present on hand**

**Dermographism present on the arm**

**Dermographism present on neck**

**Dermographism present on abdomen**

**Dermographism present on arm**

**Weals and dermographism present on arm**

**Dermographism present on arm**

**Angioedema of upper lip**

**Angioedema of lower eyelids**

**Angioedema of both upper and lower eyelids**

# KEY TO MASTERCHART

| | | |
|---|---|---|
| M | - | Male |
| F | - | Female |
| Y | - | Yes |
| N | - | No |
| VEG | - | Vegetarian |
| NON VEG | - | Non Vegetarian |
| DLQI | - | Dermatology Life Quality Index |
| Question 1 | - | Over the last week, how itchy, sore, painful or stinging has your skin been? |
| Question 2 | - | Over the last week, how embarrassed or self conscious have you been because of your skin? |
| Question 3 | - | Over the last week, how much has your skin interfered with you going shopping or looking after your home or garden? |
| Question 4 | - | Over the last week, how much has your skin influenced the clothes you wear? |
| Question 5 | - | Over the last week, how much has your skin affected any social or leisure activities? |
| Question 6 | - | Over the last week, how much has your skin made it difficult for you to do any sport? |
| Question 7 | - | Over the last week, has your skin prevented you from working or studying? |
| Question 8 | - | Over the last week, how much has your skin created problems with your partner or any of your close friends or relatives? |
| Question 9 | - | Over the last week, how much has your skin caused any sexual difficulties? |
| Question 10 | - | Over the last week, how much of a problem has the treatment for your skin been, for example by making your home messy, or by taking up time? |

| Serial Number | MRD number | Name | Age (Years) | Gender | Chief Complaints | | | Duration (Months) | Past History | | | | | | | | History of acute urticaria or angioedema | | Treatment history |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | Coronary artery disease | Seizure episode | Thyroid disorder | | | | |
| | | | | | Itching on body | Weals on body | Swelling of eyelids/ lips | | Diabetes mellitus | Tuberculosis | Bronchial asthma | Hypertension | | | Hypothyroidism | Hyperthyroidism | Acute urticaria | Angioedema | |
| 1 | 917749 | GS | 59 | M | Y | Y | N | 36 | Y | N | N | N | N | N | N | N | N | N | TAB CETRIZINE |
| 2 | 933836 | NA | 26 | F | Y | Y | N | 4 | N | N | N | N | N | N | N | N | Y | N | TAB LEVOCETRIZINE |
| 3 | 934261 | HK | 65 | F | Y | Y | N | 7 | N | N | Y | N | N | N | N | N | N | Y | - |
| 4 | 240508 | AS | 21 | M | Y | Y | N | 3 | N | N | N | N | N | N | N | N | N | N | TAB CETRIZINE |
| 5 | 936021 | M | 48 | F | Y | N | N | 5 | N | N | N | N | N | N | Y | N | N | N | - |
| 6 | 833762 | DS | 60 | M | Y | N | N | 3 | N | N | N | Y | N | N | N | N | N | N | - |
| 7 | 668053 | JS | 41 | M | Y | Y | N | 12 | N | N | N | N | N | N | N | N | N | N | TAB CETRIZINE |
| 8 | 3943 | NK | 49 | F | Y | Y | Y | 8 | N | N | N | N | N | N | N | N | Y | Y | TAB LEVOCETRIZINE |
| 9 | 936520 | PK | 22 | F | Y | Y | N | 4 | N | N | N | N | N | N | N | N | N | N | - |
| 10 | 351112 | S | 42 | F | Y | N | N | 6 | N | N | N | N | N | N | Y | N | N | N | - |
| 11 | 846896 | BK | 46 | M | Y | Y | N | 24 | N | N | N | N | N | N | N | N | N | N | TAB LEVOCETRIZINE |
| 12 | 137255 | VK | 39 | M | Y | Y | N | 18 | N | N | Y | N | N | N | N | N | N | N | TAB CETRIZINE, TAB LEVOCETRIZINE |
| 13 | 929124 | SK | 62 | F | Y | Y | N | 4 | N | N | N | Y | N | N | N | N | N | N | - |
| 14 | 61495 | C | 19 | F | Y | Y | N | 12 | N | N | N | N | N | N | Y | N | N | N | TAB CETRIZINE |
| 15 | 914942 | RS | 27 | M | Y | N | N | 12 | N | N | N | N | N | N | N | N | Y | Y | TAB CETRIZINE |
| 16 | 5924 | PK | 46 | F | Y | Y | Y | 8 | N | N | N | N | N | N | N | N | Y | N | TAB CETRIZINE |
| 17 | 941964 | SD | 65 | F | Y | Y | Y | 4 | N | N | N | Y | N | N | N | N | Y | Y | TAB CETRIZINE |
| 18 | 933000 | RV | 38 | M | Y | Y | N | 12 | N | N | N | N | N | N | N | N | N | N | - |
| 19 | 943034 | KS | 35 | M | Y | Y | N | 4 | N | N | N | N | N | N | N | N | N | N | - |
| 20 | 943159 | GS | 42 | M | Y | Y | N | 2 | N | N | N | N | N | N | N | N | N | N | - |
| 21 | 943066 | PS | 22 | M | Y | Y | N | 4 | N | N | N | N | N | N | N | N | N | N | - |
| 22 | 944055 | S | 32 | F | Y | Y | N | 6 | N | N | N | N | N | N | Y | N | N | N | - |
| 23 | 423329 | GK | 32 | F | Y | Y | N | 3 | N | N | N | N | N | N | N | N | N | N | - |
| 24 | 637461 | JK | 63 | F | Y | Y | N | 24 | Y | N | N | N | N | N | N | N | N | Y | TAB CETRIZINE |
| 25 | 946268 | JS | 55 | M | Y | Y | N | 7 | N | N | N | Y | N | N | N | N | N | N | TAB LEVOCETRIZINE |
| 26 | 946283 | PD | 40 | F | Y | Y | N | 24 | N | N | N | N | N | N | N | N | N | N | TAB CETRIZINE |
| 27 | 919078 | D | 20 | M | Y | Y | N | 4 | N | N | N | N | N | N | N | N | N | N | - |
| 28 | 946471 | BS | 32 | M | Y | Y | N | 6 | N | N | N | N | N | N | N | N | N | N | - |
| 29 | 71047 | US | 65 | F | Y | Y | N | 7 | Y | N | N | N | N | N | N | N | N | N | - |
| 30 | 938687 | S | 39 | F | Y | Y | N | 12 | N | N | N | N | N | N | Y | N | Y | N | TAB CETRIZINE |
| 31 | 931437 | R | 38 | F | Y | Y | N | 12 | N | N | N | N | N | N | N | N | Y | Y | TAB LEVOCETRIZINE |
| 32 | 702637 | SM | 31 | M | Y | Y | N | 12 | N | N | N | N | N | N | N | N | N | N | - |
| 33 | 935002 | MK | 22 | F | Y | Y | N | 4 | N | N | N | N | N | N | N | N | N | N | - |
| 34 | 951060 | PK | 36 | F | Y | Y | N | 4 | N | N | N | N | N | N | Y | N | N | N | - |
| 35 | 940452 | HK | 63 | F | Y | Y | Y | 7 | Y | N | N | Y | N | N | N | N | N | Y | TAB CETRIZINE |

| | | | | Personal History | | | | | Aggravating factors | | | | | | | | | | Local exa | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Serial Number | MRD number | Name | Satisfaction with treatment | Marrital status | Diet | Smoking | Alcohol | Family history | Heat | Cold | Sweat | Pressure | Insect bite | Food items | Drugs | Skin stroking | Infection | Others | Weals present | Number of weals | Dermographism |
| 1 | 917749 | GS | N | MARRIED | NON VEG | N | Y | ALLERGIC RHINITIS IN BROTHER | N | N | N | N | N | N | N | Y | N | N | Y | 6 | Y |
| 2 | 933836 | NA | N | UNMARRIED | VEG | N | N | - | N | N | N | N | N | N | Y | N | N | N | Y | 4 | N |
| 3 | 934261 | HK | - | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | N | - | Y |
| 4 | 240508 | AS | N | UNMARRIED | VEG | N | N | - | Y | N | N | N | N | N | N | Y | N | N | Y | 10 | Y |
| 5 | 936021 | M | - | MARRIED | VEG | N | N | - | Y | N | N | N | N | N | N | Y | N | N | N | - | Y |
| 6 | 833762 | DS | - | MARRIED | NON VEG | N | Y | - | N | N | N | N | N | N | N | N | N | N | N | - | N |
| 7 | 668053 | JS | N | MARRIED | VEG | Y | N | BRONCHIAL ASTHMA IN FATHER | N | N | Y | N | N | N | N | N | N | N | Y | 13 | N |
| 8 | 3943 | NK | N | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 20 | N |
| 9 | 936520 | PK | - | UNMARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 3 | N |
| 10 | 351112 | S | - | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | N | - | N |
| 11 | 846896 | BK | N | MARRIED | VEG | N | N | ALLERGIC RHINITIS IN BROTHER | N | N | N | N | N | N | N | N | N | N | Y | 15 | N |
| 12 | 137255 | VK | N | MARRIED | NON VEG | N | N | - | N | N | N | N | N | N | N | Y | N | N | Y | 4 | Y |
| 13 | 929124 | SK | - | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 6 | N |
| 14 | 61495 | C | N | UNMARRIED | VEG | N | N | - | N | N | N | N | N | N | N | Y | N | N | Y | 7 | Y |
| 15 | 914942 | RS | N | MARRIED | NON VEG | N | N | - | N | N | Y | N | N | N | N | N | N | N | N | - | N |
| 16 | 5924 | PK | N | MARRIED | NON VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | N | - | N |
| 17 | 941964 | SD | N | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 8 | N |
| 18 | 933000 | RV | - | MARRIED | NON VEG | N | N | BRONCHIAL ASTHMA IN GRANDFATHER | N | N | N | N | N | N | N | N | N | N | N | - | N |
| 19 | 943034 | KS | - | MARRIED | VEG | N | N | - | Y | N | Y | N | N | N | N | Y | N | N | N | - | Y |
| 20 | 943159 | GS | - | MARRIED | NON VEG | N | N | BRONCHIAL ASTHMA IN GRANDMOTHER | N | N | N | N | N | N | N | N | N | N | N | - | N |
| 21 | 943066 | PS | - | UNMARRIED | NON VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 12 | N |
| 22 | 944055 | S | - | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | Y | N | N | Y | 8 | Y |
| 23 | 423329 | GK | - | MARRIED | VEG | N | N | - | N | N | N | Y | N | N | N | N | N | N | Y | 5 | N |
| 24 | 637461 | JK | N | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | N | - | N |
| 25 | 946268 | JS | N | MARRIED | NON VEG | N | Y | - | N | N | N | N | N | N | N | N | N | N | Y | 2 | Y |
| 26 | 946283 | PD | N | MARRIED | NON VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 6 | N |
| 27 | 919078 | D | - | UNMARRIED | VEG | N | N | HYPOTHYROIDISM IN MOTHER | N | N | Y | N | N | N | N | N | N | N | N | - | N |
| 28 | 946471 | BS | - | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | Y | N | N | Y | 4 | Y |
| 29 | 71047 | US | - | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 10 | N |
| 30 | 938687 | S | N | MARRIED | NON VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 8 | N |
| 31 | 931437 | R | N | MARRIED | NON VEG | N | N | ALLERGIC RHINITIS IN FATHER | N | N | N | N | N | N | N | Y | N | N | Y | 7 | Y |
| 32 | 702637 | SM | - | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | N | - | N |
| 33 | 935002 | MK | - | UNMARRIED | NON VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 4 | N |
| 34 | 951060 | PK | - | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 16 | N |
| 35 | 940452 | HK | N | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 20 | Y |

| Serial Number | MRD number | Name | mination | | Diagnosis | Question 1 | Question 2 | Question 3 | Question 4 | Question 5 | Question 6 | Question 7 | Question 8 | Question 9 | Question 10 | DLQI Score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Angioedema | Any other features | | | | | | | | | | | | |
| 1 | 917749 | GS | N | ERYTHEMA | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM | 2 | 0 | 1 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 8 |
| 2 | 933836 | NA | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 2 | 1 | 1 | 2 | 0 | 1 | 1 | 0 | 0 | 10 |
| 3 | 934261 | HK | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 5 |
| 4 | 240508 | AS | N | ERYTHEMA | CHOLINERGIC URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 0 | 1 | 12 |
| 5 | 936021 | M | N | ERYTHEMA | CHOLINERGIC URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM | 2 | 1 | 1 | 2 | 1 | 0 | 1 | 1 | 0 | 0 | 9 |
| 6 | 833762 | DS | N | ERYTHEMA | CHRONIC SPONTANEOUS URTICARIA | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 7 | 668053 | JS | N | - | CHOLINERGIC URTICARIA | 2 | 2 | 2 | 2 | 1 | 0 | 3 | 1 | 0 | 1 | 14 |
| 8 | 3943 | NK | Y | - | CHRONIC SPONTANEOUS URTICARIA | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 4 |
| 9 | 936520 | PK | N | - | CHRONIC SPONTANEOUS URTICARIA | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 4 |
| 10 | 351112 | S | N | - | CHRONIC SPONTANEOUS URTICARIA | 1 | 0 | 0 | 1 | 1 | 0 | 2 | 0 | 1 | 0 | 6 |
| 11 | 846896 | BK | N | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 2 | 2 | 1 | 1 | 0 | 3 | 1 | 1 | 1 | 15 |
| 12 | 137255 | VK | N | - | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 5 |
| 13 | 929124 | SK | N | - | CHRONIC SPONTANEOUS URTICARIA | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 5 |
| 14 | 61495 | C | N | XEROSIS | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM | 3 | 2 | 2 | 2 | 1 | 2 | 3 | 0 | 0 | 0 | 15 |
| 15 | 914942 | RS | N | - | CHOLINERGIC URTICARIA | 2 | 2 | 2 | 1 | 1 | 0 | 2 | 1 | 1 | 0 | 12 |
| 16 | 5924 | PK | Y | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 7 |
| 17 | 941964 | SD | Y | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 2 | 2 | 2 | 1 | 0 | 1 | 1 | 0 | 0 | 12 |
| 18 | 933000 | RV | N | FOLLICULITIS | CHRONIC SPONTANEOUS URTICARIA | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 |
| 19 | 943034 | KS | N | - | CHOLINERGIC URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM | 3 | 2 | 3 | 2 | 1 | 0 | 3 | 1 | 1 | 0 | 16 |
| 20 | 943159 | GS | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 6 |
| 21 | 943066 | PS | N | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 2 | 2 | 2 | 2 | 2 | 3 | 1 | 0 | 0 | 17 |
| 22 | 944055 | S | N | - | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM | 2 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 7 |
| 23 | 423329 | GK | N | - | CHRONIC SPONTANEOUS URTICARIA WITH DELAYED PRESSURE URTICARIA | 2 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 6 |
| 24 | 637461 | JK | N | XEROSIS | CHRONIC SPONTANEOUS URTICARIA | 3 | 2 | 3 | 2 | 2 | 0 | 3 | 1 | 0 | 2 | 18 |
| 25 | 946268 | JS | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 2 | 2 | 1 | 2 | 0 | 3 | 1 | 1 | 1 | 15 |
| 26 | 946283 | PD | N | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 3 | 2 | 2 | 1 | 0 | 3 | 1 | 1 | 0 | 16 |
| 27 | 919078 | D | N | - | CHOLINERGIC URTICARIA | 2 | 1 | 1 | 2 | 1 | 2 | 3 | 1 | 0 | 0 | 13 |
| 28 | 946471 | BS | N | - | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM | 2 | 1 | 3 | 2 | 2 | 0 | 2 | 1 | 1 | 0 | 14 |
| 29 | 71047 | US | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 1 | 1 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 9 |
| 30 | 938687 | S | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 1 | 2 | 2 | 2 | 0 | 2 | 1 | 1 | 1 | 14 |
| 31 | 931437 | R | N | - | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM | 3 | 2 | 3 | 2 | 2 | 0 | 3 | 1 | 1 | 1 | 18 |
| 32 | 702637 | SM | N | ERYTHEMA | CHRONIC SPONTANEOUS URTICARIA | 2 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 5 |
| 33 | 935002 | MK | N | VESICLES & ERYTHEMA PRESENT ON HANDS | CHRONIC SPONTANEOUS URTICARIA | 2 | 2 | 1 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 9 |
| 34 | 951060 | PK | N | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 2 | 3 | 3 | 1 | 0 | 3 | 1 | 1 | 0 | 17 |
| 35 | 940452 | HK | Y | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 3 | 2 | 3 | 1 | 0 | 2 | 0 | 0 | 0 | 14 |

| Serial Number | MRD number | Name | Age (Years) | Gender | Chief Complaints | | | Duration (Months) | Past History | | | | | | | | History of acute urticaria or angioedema | | Treatment history |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | Thyroid disorder | | | | |
| | | | | | Itching on body | Weals on body | Swelling of eyelids/ lips | | Diabetes mellitus | Tuberculosis | Bronchial asthma | Hypertension | Coronary artery disease | Seizure episode | Hypothyroidism | Hyperthyroidism | Acute urticaria | Angioedema | |
| 36 | 935461 | S | 33 | M | Y | Y | N | 36 | N | N | N | N | N | N | N | N | N | N | TAB LEVOCETRIZINE |
| 37 | 950580 | KK | 40 | F | Y | Y | N | 7 | N | N | N | N | N | N | N | N | N | N | - |
| 38 | 949812 | JS | 30 | M | Y | Y | Y | 4 | N | N | N | N | N | N | N | N | N | Y | TAB CETRIZINE |
| 39 | 953648 | KK | 35 | F | Y | Y | N | 3 | N | N | N | N | N | N | Y | N | N | N | - |
| 40 | 952404 | M | 35 | F | Y | Y | N | 2 | N | N | N | N | N | N | N | N | Y | N | TAB CETRIZINE |
| 41 | 946283 | RD | 40 | F | Y | Y | N | 7 | N | N | N | N | N | N | N | N | N | N | - |
| 42 | 945262 | SK | 34 | F | Y | Y | N | 3 | N | N | N | N | N | N | Y | N | N | N | TAB CETRIZINE |
| 43 | 951128 | GK | 35 | F | Y | Y | Y | 12 | N | N | N | N | N | N | Y | N | Y | Y | TAB CETRIZINE, TAB LORATIDINE, ORAL CORTICOSTEROIDS |
| 44 | 913393 | KK | 36 | F | Y | Y | N | 8 | N | N | N | N | N | N | N | N | N | N | - |
| 45 | 406500 | HK | 57 | F | Y | Y | N | 36 | N | N | N | N | N | N | Y | N | N | N | TAB LORATIDINE, TAB HYDROXYZINE |
| 46 | 356539 | BRS | 45 | M | Y | Y | N | 7 | N | N | N | Y | N | N | N | N | N | N | - |
| 47 | 962496 | MS | 35 | M | Y | Y | N | 2 | N | N | N | N | N | N | N | N | N | N | - |
| 48 | 963274 | R | 35 | F | Y | Y | N | 3 | N | N | N | N | N | N | Y | N | N | N | TAB CETRIZINE |
| 49 | 963228 | PG | 50 | F | Y | Y | N | 7 | N | N | N | N | N | N | N | N | N | N | - |
| 50 | 687112 | NR | 32 | F | Y | Y | Y | 4 | N | N | N | N | N | N | Y | N | N | Y | INJ HYDROCORTISONE STAT, INJ PHENIRAMINE MALEATE STAT, TAB CETRIZINE |
| 51 | 8456 | PT | 37 | F | Y | Y | N | 5 | N | N | N | N | N | N | N | N | N | N | TAB CETRIZINE |
| 52 | 943054 | SS | 48 | M | Y | N | N | 3 | N | N | N | N | N | N | N | N | N | N | - |
| 53 | 898085 | NK | 22 | F | Y | Y | N | 3 | N | N | N | N | N | N | N | N | N | N | - |
| 54 | 900279 | SS | 22 | F | Y | Y | N | 12 | N | N | N | N | N | N | N | N | N | N | TAB LORATIDINE, TAB CETRIZINE |
| 55 | 966900 | AK | 26 | F | Y | Y | N | 8 | N | N | N | N | N | N | N | N | Y | Y | TAB CETRIZINE |
| 56 | 748711 | GS | 22 | M | Y | Y | Y | 8 | N | N | N | N | N | N | N | N | N | Y | TAB CETRIZINE |
| 57 | 904943 | RR | 50 | F | Y | Y | N | 4 | Y | N | N | N | N | N | Y | N | N | N | - |
| 58 | 689080 | KS | 26 | F | Y | Y | N | 18 | N | N | N | N | N | N | N | N | N | N | TAB LEVOCETRIZINE |
| 59 | 915814 | SK | 38 | M | Y | Y | N | 12 | N | N | N | N | N | N | N | N | N | N | TAB CETRIZINE |
| 60 | 913945 | HK | 65 | F | Y | Y | N | 4 | Y | N | N | N | N | N | Y | N | N | N | TAB CETRIZINE |
| 61 | 695836 | RK | 55 | F | Y | Y | N | 8 | N | N | N | N | N | N | N | N | N | N | TAB CETRIZINE |
| 62 | 887674 | R | 46 | M | Y | Y | N | 6 | N | N | N | N | N | N | N | N | N | N | - |
| 63 | 902564 | RR | 39 | F | Y | Y | Y | 5 | N | N | N | N | N | N | N | N | N | Y | TAB CETRIZINE |
| 64 | 594507 | SA | 26 | M | Y | Y | N | 4 | N | N | N | N | N | N | N | N | N | N | TAB HYDROXYZINE |
| 65 | 910012 | PK | 30 | M | Y | Y | N | 24 | N | N | N | N | N | N | N | N | N | N | TAB LEVOCETRIZINE |
| 66 | 941013 | KS | 45 | M | Y | Y | N | 5 | N | N | N | N | N | N | N | N | N | N | - |
| 67 | 941487 | SS | 22 | M | Y | Y | N | 8 | N | N | N | N | N | N | N | N | N | N | - |
| 68 | 929170 | RK | 43 | F | Y | Y | N | 24 | N | N | N | Y | N | N | N | N | N | N | TAB CETRIZINE, TAB HYDROXYZINE |
| 69 | 928166 | VK | 36 | M | Y | Y | N | 9 | Y | N | N | N | N | N | N | N | N | N | TAB LEVOCETRIZINE |
| 70 | 970492 | MK | 52 | F | Y | Y | N | 7 | Y | N | Y | N | N | N | N | N | N | N | TAB CETRIZINE |

| | | | | Personal History | | | | | Aggravating factors | | | | | | | | | | Local exa | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Serial Number | MRD number | Name | Satisfaction with treatment | Marrital status | Diet | Smoking | Alcohol | Family history | Heat | Cold | Sweat | Pressure | Insect bite | Food items | Drugs | Skin stroking | Infection | Others | Weals present | Number of weals | Dermographism |
| 36 | 935461 | S | N | MARRIED | VEG | N | Y | - | N | N | Y | N | N | N | N | N | N | N | N | - | N |
| 37 | 950580 | KK | - | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | N | - | N |
| 38 | 949812 | JS | N | MARRIED | NON VEG | N | Y | - | N | N | N | N | N | N | N | N | N | N | N | - | N |
| 39 | 953648 | KK | - | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 6 | N |
| 40 | 952404 | M | N | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 10 | Y |
| 41 | 946283 | RD | - | MARRIED | NON VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | N | - | N |
| 42 | 945262 | SK | N | MARRIED | VEG | N | N | BRONCHIAL ASTHMA IN MOTHER | N | N | N | N | N | N | N | N | N | N | Y | 12 | Y |
| 43 | 951128 | GK | N | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 8 | N |
| 44 | 913393 | KK | - | MARRIED | VEG | N | N | BRONCHIAL ASTHMA IN GRANDMOTHER | Y | N | N | N | N | N | N | N | N | N | N | - | Y |
| 45 | 406500 | HK | N | MARRIED | NON VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 14 | Y |
| 46 | 356539 | BRS | - | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 5 | N |
| 47 | 962496 | MS | - | MARRIED | NON VEG | N | Y | - | N | N | N | N | N | N | N | N | N | N | N | - | Y |
| 48 | 963274 | R | N | MARRIEED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | N | - | N |
| 49 | 963228 | PG | - | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 20 | Y |
| 50 | 687112 | NR | N | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 15 | Y |
| 51 | 8456 | PT | - | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | N | - | N |
| 52 | 943054 | SS | - | MARRIED | VEG | N | N | - | N | N | Y | N | N | N | N | N | N | N | N | - | N |
| 53 | 898085 | NK | - | UNMARRIED | NON VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 20 | N |
| 54 | 900279 | SS | N | UNMARRIED | VEG | N | N | ALLLERGIC RHINITIS IN FATHER | N | N | N | N | N | N | N | Y | N | N | Y | 8 | Y |
| 55 | 966900 | AK | N | MARRIED | NON VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | N | - | Y |
| 56 | 748711 | GS | N | UNMARRIED | NON VEG | N | N | BRONCHIAL ASTHMA IN GRANDMOTHER | N | N | N | N | N | N | N | N | N | N | Y | 22 | Y |
| 57 | 904943 | RR | - | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | N | - | N |
| 58 | 689080 | KS | N | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 13 | N |
| 59 | 915814 | SK | N | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 4 | Y |
| 60 | 913945 | HK | N | MARRIED | NON VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | N | - | Y |
| 61 | 695836 | RK | N | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | Y | N | N | N | - | Y |
| 62 | 887674 | R | - | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 7 | N |
| 63 | 902564 | RR | N | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 8 | N |
| 64 | 594507 | SA | N | UNMARRIED | NON VEG | Y | N | - | N | N | N | N | N | N | N | N | N | N | N | - | N |
| 65 | 910012 | PK | N | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 6 | Y |
| 66 | 941013 | KS | - | MARRIED | VEG | N | N | - | Y | N | N | N | N | N | N | N | N | N | Y | 16 | N |
| 67 | 941487 | SS | - | UNMARRIED | NON VEG | N | N | - | N | N | N | N | N | N | N | Y | N | N | N | - | Y |
| 68 | 929170 | RK | N | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 12 | Y |
| 69 | 928166 | VK | N | MARRIED | VEG | N | N | ALLERGIC RHINITIS IN BROTHER | N | N | N | N | N | N | N | N | N | N | N | - | Y |
| 70 | 970492 | MK | N | MARRIED | NON VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 22 | N |

| Serial Number | MRD number | Name | mination | | Diagnosis | Question 1 | Question 2 | Question 3 | Question 4 | Question 5 | Question 6 | Question 7 | Question 8 | Question 9 | Question 10 | DLQI Score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Angioedema | Any other features | | | | | | | | | | | | |
| 36 | 935461 | S | N | - | CHOLINERGIC URTICARIA | 3 | 0 | 1 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 7 |
| 37 | 950580 | KK | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 38 | 949812 | JS | Y | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 2 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 9 |
| 39 | 953648 | KK | N | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 2 | 2 | 2 | 1 | 0 | 3 | 2 | 1 | 0 | 16 |
| 40 | 952404 | M | N | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 3 | 2 | 3 | 2 | 0 | 1 | 1 | 0 | 0 | 15 |
| 41 | 946283 | RD | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 2 | 2 | 1 | 1 | 0 | 3 | 2 | 1 | 0 | 14 |
| 42 | 945262 | SK | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 5 |
| 43 | 951128 | GK | Y | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 3 | 3 | 2 | 2 | 0 | 3 | 1 | 2 | 2 | 21 |
| 44 | 913393 | KK | N | MELASMA | CHOLINERGIC URTICARIA | 2 | 0 | 1 | 2 | 1 | 0 | 3 | 0 | 1 | 0 | 10 |
| 45 | 406500 | HK | N | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 2 | 3 | 2 | 2 | 0 | 3 | 1 | 0 | 1 | 17 |
| 46 | 356539 | BRS | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 5 |
| 47 | 962496 | MS | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 2 | 1 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 8 |
| 48 | 963274 | R | N | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 3 | 1 | 2 | 1 | 0 | 1 | 1 | 0 | 0 | 12 |
| 49 | 963228 | PG | N | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 2 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 10 |
| 50 | 687112 | NR | Y | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 3 | 3 | 3 | 2 | 0 | 3 | 2 | 2 | 2 | 23 |
| 51 | 8456 | PT | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 6 |
| 52 | 943054 | SS | N | - | CHOLINERGIC URTICARIA | 3 | 2 | 3 | 3 | 1 | 0 | 3 | 1 | 1 | 0 | 17 |
| 53 | 898085 | NK | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 5 |
| 54 | 900279 | SS | N | - | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM | 3 | 1 | 0 | 2 | 1 | 1 | 3 | 0 | 0 | 1 | 12 |
| 55 | 966900 | AK | N | ACNE ON FACE | CHRONIC SPONTANEOUS URTICARIA | 3 | 3 | 2 | 2 | 2 | 0 | 3 | 1 | 1 | 1 | 18 |
| 56 | 748711 | GS | Y | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 3 | 2 | 2 | 1 | 3 | 3 | 2 | 0 | 2 | 21 |
| 57 | 904943 | RR | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 0 | 1 | 2 | 1 | 0 | 1 | 0 | 1 | 0 | 8 |
| 58 | 689080 | KS | N | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 3 | 2 | 3 | 2 | 0 | 2 | 1 | 1 | 2 | 19 |
| 59 | 915814 | SK | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 1 | 2 | 2 | 1 | 0 | 1 | 0 | 0 | 1 | 10 |
| 60 | 913945 | HK | N | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 3 | 2 | 2 | 2 | 0 | 3 | 1 | 0 | 1 | 17 |
| 61 | 695836 | RK | N | - | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM | 3 | 2 | 3 | 3 | 2 | 0 | 3 | 2 | 1 | 1 | 20 |
| 62 | 887674 | R | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 1 | 1 | 2 | 1 | 0 | 2 | 1 | 0 | 0 | 10 |
| 63 | 902564 | RR | Y | MELASMA | CHRONIC SPONTANEOUS URTICARIA | 3 | 3 | 3 | 0 | 2 | 0 | 3 | 2 | 0 | 1 | 17 |
| 64 | 594507 | SA | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 7 |
| 65 | 910012 | PK | N | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 2 | 2 | 0 | 2 | 0 | 2 | 1 | 1 | 2 | 15 |
| 66 | 941013 | KS | N | - | CHOLINERGIC URTICARIA | 3 | 2 | 2 | 3 | 2 | 0 | 3 | 1 | 1 | 0 | 17 |
| 67 | 941487 | SS | N | - | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM | 3 | 0 | 1 | 2 | 0 | 2 | 3 | 1 | 0 | 0 | 12 |
| 68 | 929170 | RK | N | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 2 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 2 | 10 |
| 69 | 928166 | VK | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 1 | 0 | 1 | 1 | 0 | 2 | 1 | 0 | 1 | 9 |
| 70 | 970492 | MK | N | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 3 | 2 | 2 | 1 | 0 | 3 | 0 | 1 | 2 | 17 |

| Serial Number | MRD number | Name | Age (Years) | Gender | Chief Complaints | | | Duration (Months) | Past History | | | | | | | | History of acute urticaria or angioedema | | Treatment history |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | Thyroid disorder | | | | |
| | | | | | Itching on body | Weals on body | Swelling of eyelids/ lips | | Diabetes mellitus | Tuberculosis | Bronchial asthma | Hypertension | Coronary artery disease | Seizure episode | Hypothyroidism | Hyperthyroidism | Acute urticaria | Angioedema | |
| 71 | 687174 | KD | 26 | F | Y | Y | N | 12 | N | N | N | N | N | N | N | N | Y | Y | TAB CETRIZINE |
| 72 | 572582 | KS | 28 | M | Y | Y | N | 3 | N | N | N | N | N | N | N | N | N | N | - |
| 73 | 283887 | GK | 40 | F | Y | Y | N | 4 | N | N | N | N | N | N | N | N | N | N | - |
| 74 | 906861 | MK | 40 | F | Y | Y | N | 6 | N | N | N | Y | N | N | Y | N | N | N | TAB LEVOCETRIZINE, TAB HYDROXYZINE |
| 75 | 256181 | SD | 50 | F | Y | Y | N | 8 | Y | N | N | N | N | N | N | N | Y | N | TAB CETRIZINE |
| 76 | 598741 | JK | 28 | F | Y | Y | N | 5 | N | N | N | N | N | N | N | N | Y | N | TAB HYDROXYZINE |
| 77 | 958294 | VK | 50 | F | Y | Y | Y | 24 | Y | N | Y | N | N | N | N | N | N | Y | TAB LEVOCETRIZINE, TAB HYDROXYZINE, ORAL CORTICOSTROIDS |
| 78 | 803818 | DK | 25 | F | Y | Y | N | 8 | N | N | N | N | N | N | N | N | N | N | - |
| 79 | 975787 | MP | 40 | M | Y | Y | N | 5 | N | N | N | N | N | N | N | N | N | N | - |
| 80 | 978347 | PK | 40 | M | Y | Y | N | 4 | N | N | N | Y | N | N | N | N | N | N | TAB CETRIZINE |
| 81 | 978294 | MC | 32 | F | Y | Y | N | 18 | N | N | Y | N | N | N | N | N | N | N | TAB LEVOCETRIZINE, TAB HYDROXYZINE |
| 82 | 965985 | A | 25 | M | Y | Y | N | 12 | N | N | N | N | N | N | N | N | N | N | TAB CETRIZINE |
| 83 | 348876 | SG | 34 | F | Y | Y | N | 5 | N | N | N | N | N | N | Y | N | N | N | - |
| 84 | 228913 | R | 18 | F | Y | Y | N | 4 | N | N | N | N | N | N | N | N | N | N | - |
| 85 | 971877 | SK | 36 | F | Y | Y | N | 24 | N | N | N | N | N | N | N | N | N | N | TAB DESLORATIDINE, TAB DEXCHLORPHENIRAMINE |
| 86 | 259486 | KS | 32 | M | Y | Y | N | 120 | N | N | N | N | N | N | N | N | N | N | TAB CETRIZINE, TAB HYDROXYZINE, ORAL CORTICOSTEROIDS |
| 87 | 980972 | NA | 43 | F | Y | Y | N | 36 | Y | N | N | Y | N | N | N | N | Y | N | TAB CETRIZINE, TAB LEVOCETRIZINE, TAB HYDROXYZINE |
| 88 | 975228 | SSG | 21 | M | Y | N | N | 4 | N | N | N | N | N | N | N | N | N | N | - |
| 89 | 981267 | MS | 25 | F | Y | Y | N | 7 | N | N | N | N | N | N | N | N | N | N | TAB CETRIZINE |
| 90 | 183355 | DG | 50 | M | Y | Y | N | 24 | N | N | N | Y | N | N | N | N | Y | N | TAB CETRIZINE |
| 91 | 981930 | HK | 48 | F | Y | Y | N | 10 | N | N | N | N | N | N | N | N | N | N | TAB CETRIZINE |
| 92 | 981979 | SG | 18 | F | Y | Y | N | 8 | N | N | N | N | N | N | Y | N | N | N | - |
| 93 | 904541 | S | 50 | F | Y | Y | N | 7 | N | N | N | N | N | N | Y | N | N | N | - |
| 94 | 982616 | KSK | 43 | M | Y | Y | N | 5 | N | N | N | Y | N | N | N | N | N | N | TAB CETRIZINE |
| 95 | 976143 | RK | 28 | M | Y | Y | N | 24 | N | Y | N | N | N | N | N | N | N | N | TAB CETRIZINE, TAB HYDROXYZINE |
| 96 | 282985 | SK | 41 | F | Y | Y | N | 4 | N | N | N | Y | N | N | N | N | Y | Y | TAB BILASTINE |
| 97 | 7143 | SS | 35 | M | Y | Y | N | 8 | N | N | N | N | N | N | N | N | N | N | TAB CETRIZINE |
| 98 | 529153 | RD | 27 | M | Y | Y | N | 24 | N | N | N | N | N | N | N | N | Y | Y | TAB CETRIZINE, TAB HYDROXYZINE |

| | | | | Personal History | | | | | Aggravating factors | | | | | | | | | | Local exa | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Serial Number | MRD number | Name | Satisfaction with treatment | Marrital status | Diet | Smoking | Alcohol | Family history | Heat | Cold | Sweat | Pressure | Insect bite | Food items | Drugs | Skin stroking | Infection | Others | Weals present | Number of weals | Dermographism |
| 71 | 687174 | KD | N | UNMARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 2 | N |
| 72 | 572582 | KS | - | MARRIED | VEG | N | N | - | N | N | N | Y | N | N | N | N | N | N | N | - | N |
| 73 | 283887 | GK | - | MARRIED | VEG | N | N | HYPOTHYROIDISM IN SISTER | N | N | N | N | N | N | N | N | N | N | Y | 4 | Y |
| 74 | 906861 | MK | N | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | N | - | N |
| 75 | 256181 | SD | N | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | Y | N | N | Y | 6 | Y |
| 76 | 598741 | JK | N | MARRIED | NON VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 7 | Y |
| 77 | 958294 | VK | N | MARRIED | NON VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 22 | Y |
| 78 | 803818 | DK | - | UNMARRIED | NON VEG | N | N | HYPOTHYROIDISM IN MOTHER | N | N | N | N | N | N | N | N | N | N | N | - | Y |
| 79 | 975787 | MP | - | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 5 | N |
| 80 | 978347 | PK | N | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | N | - | N |
| 81 | 978294 | MC | N | MARRIED | NON VEG | N | N | - | N | N | N | N | N | N | N | Y | N | N | N | - | Y |
| 82 | 965985 | A | N | UNMARRIED | VEG | N | N | ALLERGIC RHINITIS IN FATHER | N | N | N | N | N | N | N | N | N | N | Y | 12 | Y |
| 83 | 348876 | SG | - | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 8 | N |
| 84 | 228913 | R | - | UNMARRIED | NON VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 2 | Y |
| 85 | 971877 | SK | N | MARRIED | NON VEG | N | N | BRONCHIAL ASTHMA IN MOTHER | N | N | N | N | N | RICE, CHICK PEA | N | Y | N | N | Y | 4 | Y |
| 86 | 259486 | KS | N | MARRIED | NON VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 10 | Y |
| 87 | 980972 | NA | N | MARRIED | VEG | N | N | - | N | N | N | N | N | NUTS | N | Y | N | N | N | - | Y |
| 88 | 975228 | SSG | - | UNMARRIED | NON VEG | N | N | - | N | N | N | Y | N | N | N | N | N | N | N | - | N |
| 89 | 981267 | MS | N | UNMARRIED | VEG | N | N | BRONCHIAL ASTHMA IN GRANDFATHER | N | N | N | N | N | N | N | N | N | N | Y | 5 | Y |
| 90 | 183355 | DG | N | MARRIED | VEG | Y | Y | - | N | N | Y | N | N | N | N | N | N | N | N | - | Y |
| 91 | 981930 | HK | N | MARRIED | NON VEG | N | N | - | N | N | N | N | N | N | N | Y | N | N | N | - | Y |
| 92 | 981979 | SG | - | UNMARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 7 | N |
| 93 | 904541 | S | - | MARRIED | VEG | N | N | BRONCHIAL ASTHMA IN FATHER | N | N | N | N | N | NUTS | N | N | N | N | N | - | Y |
| 94 | 982616 | KSK | N | MARRIED | NON VEG | N | Y | - | N | N | N | N | N | N | N | Y | N | N | Y | 8 | Y |
| 95 | 976143 | RK | N | MARRIED | VEG | Y | N | - | N | N | N | N | N | N | N | N | N | N | Y | 4 | N |
| 96 | 282985 | SK | N | MARRIED | VEG | N | N | - | N | N | N | N | N | N | NSAIDS | N | N | N | Y | 20 | N |
| 97 | 7143 | SS | N | MARRIED | NON VEG | Y | Y | - | N | N | N | N | N | N | N | N | N | N | Y | 4 | Y |
| 98 | 529153 | RD | N | UNMARRIED | VEG | N | Y | ALLERGIC RHINITIS IN BROTHER | N | N | N | N | N | N | N | Y | N | N | N | - | Y |

| Serial Number | MRD number | Name | mination | | Diagnosis | Question 1 | Question 2 | Question 3 | Question 4 | Question 5 | Question 6 | Question 7 | Question 8 | Question 9 | Question 10 | DLQI Score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Angioedema | Any other features | | | | | | | | | | | | |
| 71 | 687174 | KD | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 2 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 2 | 9 |
| 72 | 572582 | KS | N | ERYTHEMA ON BACK | DELAYED PRESSURE URTICARIA | 2 | 1 | 0 | 2 | 2 | 0 | 1 | 0 | 2 | 0 | 10 |
| 73 | 283887 | GK | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 0 | 3 | 1 | 3 | 0 | 2 | 1 | 1 | 0 | 13 |
| 74 | 906861 | MK | N | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 3 | 2 | 1 | 2 | 0 | 2 | 0 | 0 | 2 | 15 |
| 75 | 256181 | SD | N | - | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM | 3 | 3 | 2 | 1 | 1 | 0 | 2 | 1 | 0 | 2 | 15 |
| 76 | 598741 | JK | N | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 3 | 3 | 2 | 1 | 0 | 3 | 2 | 1 | 2 | 20 |
| 77 | 958294 | VK | Y | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 2 | 3 | 3 | 3 | 0 | 3 | 2 | 2 | 3 | 24 |
| 78 | 803818 | DK | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 1 | 0 | 1 | 2 | 0 | 3 | 1 | 0 | 0 | 10 |
| 79 | 975787 | MP | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 2 | 3 | 0 | 1 | 0 | 2 | 1 | 1 | 0 | 12 |
| 80 | 978347 | PK | N | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 3 | 2 | 3 | 3 | 0 | 3 | 2 | 2 | 2 | 23 |
| 81 | 978294 | MC | N | - | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM | 3 | 3 | 2 | 2 | 2 | 0 | 3 | 2 | 1 | 2 | 20 |
| 82 | 965985 | A | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 1 | 7 |
| 83 | 348876 | SG | N | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 2 | 2 | 1 | 2 | 0 | 2 | 1 | 1 | 0 | 14 |
| 84 | 228913 | R | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 6 |
| 85 | 971877 | SK | N | LICHENIFICATION, EXCORIATIONS | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM | 1 | 1 | 2 | 3 | 2 | 3 | 3 | 2 | 2 | 1 | 20 |
| 86 | 259486 | KS | N | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 1 | 2 | 2 | 2 | 0 | 2 | 1 | 2 | 2 | 17 |
| 87 | 980972 | NA | N | - | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM | 2 | 3 | 1 | 0 | 1 | 0 | 3 | 1 | 2 | 2 | 15 |
| 88 | 975228 | SSG | N | ERYTHEMA ON BUTTOCKS | DELAYED PRESSURE URTICARIA | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 1 | 0 | 0 | 11 |
| 89 | 981267 | MS | N | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 1 | 1 | 0 | 1 | 0 | 3 | 0 | 0 | 2 | 11 |
| 90 | 183355 | DG | N | - | CHOLINERGIC URTICARIA | 3 | 2 | 3 | 3 | 3 | 0 | 3 | 1 | 2 | 3 | 23 |
| 91 | 981930 | HK | N | - | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM | 2 | 3 | 2 | 0 | 3 | 0 | 2 | 1 | 2 | 2 | 17 |
| 92 | 981979 | SG | N | PSEUDOACANTHOSIS NIGRICANS | CHRONIC SPONTANEOUS URTICARIA | 1 | 2 | 0 | 1 | 1 | 1 | 2 | 0 | 0 | 0 | 8 |
| 93 | 904541 | S | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 1 | 3 | 2 | 0 | 0 | 3 | 1 | 1 | 0 | 13 |
| 94 | 982616 | KSK | N | - | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM | 3 | 0 | 0 | 2 | 2 | 0 | 3 | 1 | 2 | 1 | 14 |
| 95 | 976143 | RK | N | ACNEIFORM ERUPTION | CHRONIC SPONTANEOUS URTICARIA | 3 | 2 | 0 | 1 | 2 | 0 | 3 | 2 | 2 | 3 | 18 |
| 96 | 282985 | SK | N | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 3 | 3 | 1 | 2 | 0 | 3 | 2 | 2 | 3 | 22 |
| 97 | 7143 | SS | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 0 | 1 | 2 | 1 | 0 | 2 | 0 | 1 | 2 | 11 |
| 98 | 529153 | RD | N | - | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM | 3 | 1 | 2 | 2 | 2 | 0 | 2 | 0 | 2 | 3 | 17 |

| Serial Number | MRD number | Name | Age (Years) | Gender | Chief Complaints | | | Duration (Months) | Past History | | | | | | | | History of acute urticaria or angioedema | | Treatment history |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | Thyroid disorder | | | | |
| | | | | | Itching on body | Weals on body | Swelling of eyelids/ lips | | Diabetes mellitus | Tuberculosis | Bronchial asthma | Hypertension | Coronary artery disease | Seizure episode | Hypothyroidism | Hyperthyroidism | Acute urticaria | Angioedema | |
| 99 | 978247 | RS | 25 | M | Y | Y | N | 6 | N | N | N | N | N | N | N | N | N | N | - |
| 100 | 985982 | PC | 25 | F | Y | Y | N | 12 | N | N | N | N | N | N | N | N | Y | N | TAB CETRIZINE |
| 101 | 982505 | L | 60 | F | Y | Y | N | 24 | Y | N | N | Y | Y | N | N | N | N | N | TAB CETRIZINE, TAB HYDROXYZINE |
| 102 | 984510 | NK | 65 | F | Y | Y | Y | 36 | N | N | N | Y | Y | N | Y | N | N | Y | TAB CETRIZINE |
| 103 | 5118 | SK | 21 | F | Y | Y | N | 4 | N | N | N | N | N | N | N | N | N | N | - |
| 104 | 974287 | HK | 20 | F | Y | Y | N | 3 | N | N | N | N | N | N | N | N | N | N | - |
| 105 | 89616 | SB | 42 | F | Y | Y | N | 8 | Y | N | N | N | N | N | N | N | N | N | - |
| 106 | 966927 | AK | 26 | F | Y | Y | N | 12 | N | N | N | N | N | N | Y | N | N | Y | TAB LEVOCETRIZINE, TAB DEXCHLORPHENIRAMINE |
| 107 | 531555 | NP | 61 | M | Y | Y | N | 12 | Y | N | N | Y | Y | N | N | N | N | N | TAB CETRIZINE |
| 108 | 420376 | MK | 37 | F | Y | Y | N | 4 | N | Y | N | N | N | N | N | N | N | N | - |
| 109 | 990601 | KK | 52 | F | Y | Y | N | 240 | N | N | N | N | N | N | N | N | Y | Y | TAB LEVOCETRIZINE |
| 110 | 990738 | NK | 60 | F | Y | Y | N | 3 | N | N | N | N | N | N | Y | N | Y | N | TAB LEVOCETRIZINE, TAB HYDROXYZINE |
| 111 | 457667 | JS | 47 | F | Y | Y | Y | 9 | N | N | N | Y | N | N | N | N | N | N | TAB CETRIZINE |
| 112 | 993454 | AK | 35 | M | Y | Y | N | 15 | N | N | N | N | N | N | N | N | N | N | UNKNOWN |
| 113 | 993433 | KK | 44 | M | Y | Y | N | 6 | Y | N | N | N | N | N | N | N | N | N | - |
| 114 | 993617 | HS | 23 | M | Y | Y | N | 24 | N | N | N | N | N | N | N | N | N | N | TAB CETRIZINE |
| 115 | 995860 | GK | 62 | F | Y | Y | N | 4 | N | N | N | Y | N | N | N | N | N | N | - |
| 116 | 996492 | AK | 34 | F | Y | Y | N | 8 | N | N | N | N | N | N | Y | N | N | N | TAB CETRIZINE |
| 117 | 984024 | SY | 25 | M | Y | Y | N | 7 | N | N | N | N | N | N | N | N | N | N | - |
| 118 | 995892 | M | 23 | F | Y | Y | N | 3 | N | N | N | N | N | N | N | N | N | N | - |
| 119 | 995893 | S | 45 | F | Y | Y | N | 24 | Y | N | N | Y | N | N | N | N | N | Y | TAB CETRIZINE |
| 120 | 105403 | PS | 31 | M | Y | Y | N | 18 | N | N | Y | N | N | N | N | N | Y | Y | TAB CETRIZINE, TAB LEVOCETRIZINE, TAB HYDROXYZINE |
| 121 | 997383 | M | 32 | F | Y | Y | Y | 2.5 | Y | N | N | N | N | N | N | N | N | Y | TAB CETRIZINE |
| 122 | 997785 | JS | 52 | M | Y | Y | N | 10 | N | N | N | Y | N | N | N | N | N | N | - |
| 123 | 663736 | GK | 56 | M | Y | Y | N | 18 | Y | N | N | N | N | N | N | N | N | N | TAB CETRIZINE |
| 124 | 998728 | MS | 23 | M | Y | Y | N | 4 | N | N | N | N | N | N | N | N | N | N | - |
| 125 | 984096 | PN | 47 | F | Y | Y | N | 24 | N | N | N | N | N | N | N | N | N | N | TAB CETRIZINE, TAB LEVOCETRIZINE, TAB HYDROXYZINE |
| 126 | 994897 | RK | 43 | F | Y | Y | N | 12 | N | N | N | N | N | N | N | N | N | N | UNKNOWN |
| 127 | 1000784 | T | 65 | F | Y | Y | N | 5 | Y | N | N | Y | Y | N | N | N | N | N | - |
| 128 | 1001177 | ES | 20 | F | Y | Y | N | 4 | N | N | N | N | N | N | N | N | N | N | - |
| 129 | 1001369 | D | 35 | F | Y | Y | Y | 3 | N | N | N | N | N | N | Y | N | Y | Y | TAB CETRIZINE |

| | | | | Personal History | | | | | Aggravating factors | | | | | | | | | | Local exa | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Serial Number | MRD number | Name | Satisfaction with treatment | Marrital status | Diet | Smoking | Alcohol | Family history | Heat | Cold | Sweat | Pressure | Insect bite | Food items | Drugs | Skin stroking | Infection | Others | Weals present | Number of weals | Dermographism |
| 99 | 978247 | RS | - | UNMARRIED | NON VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 5 | Y |
| 100 | 985982 | PC | N | UNMARRIED | VEG | N | N | HYPOTHYROIDISM IN MOTHER | N | N | N | N | N | N | N | Y | N | N | Y | 12 | Y |
| 101 | 982505 | L | N | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 4 | Y |
| 102 | 984510 | NK | N | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | N | - | Y |
| 103 | 5118 | SK | - | UNMARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 7 | N |
| 104 | 974287 | HK | - | UNMARRIED | NON VEG | N | N | - | N | N | Y | N | N | N | N | N | N | N | N | - | Y |
| 105 | 89616 | SB | - | MARRIED | NON VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 2 | Y |
| 106 | 966927 | AK | N | UNMARRIED | VEG | N | N | ALLERGIC RHINITIS IN SISTER | N | N | N | N | N | N | N | N | N | N | Y | 5 | Y |
| 107 | 531555 | NP | N | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 10 | Y |
| 108 | 420376 | MK | - | MARRIED | NON VEG | N | N | - | N | N | N | N | N | N | N | Y | N | N | N | - | Y |
| 109 | 990601 | KK | N | MARRIED | NON VEG | N | N | BRONCHIAL ASTHMA IN MOTHER | N | N | N | N | N | N | N | N | N | N | N | - | N |
| 110 | 990738 | NK | N | MARRIED | NON VEG | N | N | - | N | N | N | N | N | SPICY FOOD | N | Y | N | N | N | - | Y |
| 111 | 457667 | JS | N | MARRIED | VEG | Y | Y | - | N | N | N | N | N | N | N | N | N | N | Y | 4 | Y |
| 112 | 993454 | AK | N | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | N | - | N |
| 113 | 993433 | KK | - | MARRIED | VEG | Y | N | - | N | N | N | N | N | N | N | N | N | N | N | - | N |
| 114 | 993617 | HS | N | UNMARRIED | NON VEG | N | N | ALLERGIC RHINITIS IN MOTHER | N | N | N | N | N | N | N | N | N | N | Y | 6 | N |
| 115 | 995860 | GK | - | WIDOW | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 14 | Y |
| 116 | 996492 | AK | N | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | Y | N | N | N | - | Y |
| 117 | 984024 | SY | - | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 5 | Y |
| 118 | 995892 | M | - | UNMARRIED | VEG | N | N | - | N | N | N | N | N | N | NSAIDS | N | N | N | Y | 5 | Y |
| 119 | 995893 | S | N | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | N | - | N |
| 120 | 105403 | PS | N | MARRIED | NON VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | N | - | N |
| 121 | 997383 | M | N | MARRIED | NON VEG | N | N | - | N | N | N | N | N | N | N | Y | N | N | Y | 15 | Y |
| 122 | 997785 | JS | - | MARRIED | NON VEG | Y | Y | - | N | N | N | N | N | N | N | N | N | N | N | - | N |
| 123 | 663736 | GK | N | MARRIED | VEG | Y | N | - | N | N | N | N | N | N | N | N | N | N | N | - | Y |
| 124 | 998728 | MS | - | UNMARRIED | NON VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 13 | N |
| 125 | 984096 | PN | N | MARRIED | VEG | N | N | - | N | N | N | N | N | NUTS | NSAIDS | N | N | N | N | - | N |
| 126 | 994897 | RK | N | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | N | - | N |
| 127 | 1000784 | T | - | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | N | - | Y |
| 128 | 1001177 | ES | - | UNMARRIED | VEG | N | N | BRONCHIAL ASTHMA IN MOTHER | N | N | N | N | N | N | N | N | N | N | N | - | N |
| 129 | 1001369 | D | N | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 8 | Y |

| Serial Number | MRD number | Name | mination | | Diagnosis | Question 1 | Question 2 | Question 3 | Question 4 | Question 5 | Question 6 | Question 7 | Question 8 | Question 9 | Question 10 | DLQI Score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Angioedema | Any other features | | | | | | | | | | | | |
| 99 | 978247 | RS | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 0 | 0 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 6 |
| 100 | 985982 | PC | N | ACNE VULGARIS | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM | 3 | 0 | 1 | 2 | 1 | 0 | 3 | 0 | 0 | 2 | 12 |
| 101 | 982505 | L | N | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 2 | 3 | 3 | 3 | 0 | 3 | 2 | 0 | 3 | 22 |
| 102 | 984510 | NK | Y | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 3 | 2 | 2 | 2 | 0 | 3 | 2 | 0 | 3 | 20 |
| 103 | 5118 | SK | N | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 1 | 2 | 2 | 2 | 3 | 3 | 1 | 0 | 0 | 17 |
| 104 | 974287 | HK | N | - | CHOLINERGIC URTICARIA | 2 | 2 | 3 | 3 | 1 | 2 | 0 | 1 | 0 | 0 | 12 |
| 105 | 89616 | SB | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 1 | 2 | 3 | 1 | 0 | 0 | 1 | 1 | 0 | 11 |
| 106 | 966927 | AK | Y | ERYTHEMA | CHRONIC SPONTANEOUS URTICARIA | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 5 |
| 107 | 531555 | NP | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 0 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 2 | 8 |
| 108 | 420376 | MK | N | - | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM | 3 | 2 | 2 | 2 | 1 | 1 | 3 | 1 | 2 | 0 | 17 |
| 109 | 990601 | KK | N | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 3 | 0 | 3 | 3 | 0 | 3 | 2 | 1 | 3 | 21 |
| 110 | 990738 | NK | N | ERYTHEMA | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 5 |
| 111 | 457667 | JS | Y | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 3 | 3 | 0 | 2 | 0 | 3 | 1 | 2 | 3 | 20 |
| 112 | 993454 | AK | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 2 | 8 |
| 113 | 993433 | KK | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 4 |
| 114 | 993617 | HS | N | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 2 | 0 | 2 | 2 | 3 | 3 | 0 | 0 | 3 | 18 |
| 115 | 995860 | GK | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 0 | 2 | 3 | 3 | 1 | 3 | 2 | 0 | 2 | 18 |
| 116 | 996492 | AK | N | - | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM | 2 | 3 | 3 | 0 | 2 | 1 | 2 | 0 | 1 | 2 | 15 |
| 117 | 984024 | SY | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 0 | 1 | 2 | 2 | 1 | 1 | 0 | 0 | 1 | 10 |
| 118 | 995892 | M | N | - | CHRONIC SPONTANEOUS URTICARIA | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 5 |
| 119 | 995893 | S | N | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 0 | 3 | 1 | 2 | 0 | 3 | 1 | 1 | 2 | 16 |
| 120 | 105403 | PS | N | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 0 | 2 | 1 | 0 | 0 | 2 | 1 | 1 | 3 | 13 |
| 121 | 997383 | M | Y | - | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM | 3 | 2 | 1 | 1 | 2 | 3 | 1 | 0 | 0 | 3 | 16 |
| 122 | 997785 | JS | N | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 0 | 2 | 1 | 3 | 0 | 2 | 1 | 1 | 3 | 16 |
| 123 | 663736 | GK | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 1 | 1 | 2 | 3 | 0 | 3 | 1 | 1 | 3 | 17 |
| 124 | 998728 | MS | N | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 3 | 1 | 3 | 2 | 3 | 3 | 0 | 0 | 1 | 19 |
| 125 | 984096 | PN | N | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 3 | 3 | 2 | 3 | 0 | 3 | 2 | 2 | 3 | 23 |
| 126 | 994897 | RK | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 |
| 127 | 1000784 | T | N | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 3 | 2 | 3 | 2 | 0 | 2 | 2 | 0 | 2 | 19 |
| 128 | 1001177 | ES | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 0 | 3 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 11 |
| 129 | 1001369 | D | Y | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 3 | 3 | 0 | 2 | 3 | 3 | 2 | 1 | 3 | 23 |

| Serial Number | MRD number | Name | Age (Years) | Gender | Chief Complaints | | | Duration (Months) | Past History | | | | | | | | History of acute urticaria or angioedema | | Treatment history |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | Thyroid disorder | | | | |
| | | | | | Itching on body | Weals on body | Swelling of eyelids/ lips | | Diabetes mellitus | Tuberculosis | Bronchial asthma | Hypertension | Coronary artery disease | Seizure episode | Hypothyroidism | Hyperthyroidism | Acute urticaria | Angioedema | |
| 130 | 984132 | MK | 29 | F | Y | Y | N | 7 | N | N | N | N | N | N | N | N | N | N | TAB CETRIZINE |
| 131 | 866919 | SS | 40 | M | Y | Y | N | 24 | N | N | N | Y | N | N | N | N | N | N | TAB CETRIZINE |
| 132 | 991866 | KK | 38 | F | Y | Y | N | 3 | N | N | N | N | N | N | N | N | N | N | - |
| 133 | 888349 | AK | 24 | F | Y | Y | N | 4 | N | N | N | N | N | N | N | N | N | N | - |
| 134 | 984740 | DK | 35 | F | Y | Y | N | 12 | N | N | N | N | N | N | N | N | N | N | TAB CETRIZINE |
| 135 | 907411 | S | 45 | F | Y | Y | N | 7 | N | N | N | Y | N | N | N | N | N | N | - |
| 136 | 991655 | JK | 50 | F | Y | Y | N | 4 | N | N | N | N | N | N | N | N | N | N | TAB CETRIZINE |
| 137 | 835918 | VK | 49 | F | Y | Y | N | 36 | N | N | N | N | N | N | N | N | N | Y | TAB LEVOCETRIZINE, HOMEOPATHIC MEDICINE |
| 138 | 826800 | AK | 23 | F | Y | Y | N | 2 | N | N | N | N | N | N | N | N | N | N | TAB LEVOCETRIZINE |
| 139 | 905922 | P | 32 | F | Y | Y | N | 24 | N | N | N | N | N | N | N | N | N | N | TAB CETRIZINE |
| 140 | 889348 | AK | 35 | F | Y | Y | N | 8 | N | N | N | N | N | N | N | N | N | N | - |
| 141 | 998236 | AK | 35 | F | Y | Y | Y | 4 | N | N | N | N | N | N | N | N | N | Y | TAB CETRIZINE |
| 142 | 1007624 | AB | 35 | F | Y | Y | N | 24 | N | N | Y | N | N | N | Y | N | N | N | - |
| 143 | 1009043 | VS | 33 | M | Y | Y | N | 6 | N | N | N | N | N | N | N | N | N | N | - |
| 144 | 35516 | V | 49 | F | Y | Y | N | 36 | N | Y | N | Y | N | N | N | N | N | N | TAB CETRIZINE, HOMEOPATHIC MEDICATION |
| 145 | 927627 | HS | 19 | M | Y | N | N | 6 | N | N | N | N | N | N | N | N | N | N | - |
| 146 | 965601 | AS | 29 | M | Y | Y | N | 7 | N | N | N | N | N | N | N | N | N | N | - |
| 147 | 41606 | S | 49 | F | Y | Y | N | 10 | Y | N | N | Y | N | N | N | N | N | N | TAB CETRIZINE |
| 148 | 976852 | SN | 60 | M | Y | Y | N | 10 | Y | N | N | Y | Y | N | N | N | N | N | - |
| 149 | 1004100 | OP | 65 | M | Y | Y | Y | 4 | Y | N | N | N | Y | N | N | N | N | Y | - |
| 150 | 1024850 | NS | 29 | M | Y | Y | Y | 6 | N | N | N | N | N | N | N | N | N | N | - |

| | | | | Personal History | | | | | Aggravating factors | | | | | | | | | | Local exa | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Serial Number | MRD number | Name | Satisfaction with treatment | Marrital status | Diet | Smoking | Alcohol | Family history | Heat | Cold | Sweat | Pressure | Insect bite | Food items | Drugs | Skin stroking | Infection | Others | Weals present | Number of weals | Dermographism |
| 130 | 984132 | MK | N | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 4 | Y |
| 131 | 866919 | SS | N | MARRIED | NON VEG | N | Y | - | N | N | N | N | N | N | N | N | N | N | Y | 5 | N |
| 132 | 991866 | KK | - | MARRIED | NON VEG | N | N | - | N | N | N | N | N | EGGS | N | N | N | N | N | - | Y |
| 133 | 888349 | AK | - | UNMARRIED | NON VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | N | - | N |
| 134 | 984740 | DK | N | MARRIED | VEG | N | N | ALLERGIC RHINITIS IN FATHER | N | N | N | N | N | N | N | Y | N | N | N | - | Y |
| 135 | 907411 | S | - | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 10 | N |
| 136 | 991655 | JK | N | MARRIED | NON VEG | N | N | - | N | N | N | N | N | N | N | Y | N | N | Y | 3 | Y |
| 137 | 835918 | VK | N | MARRIED | NON VEG | N | N | - | N | N | N | N | N | N | N | Y | N | N | N | - | Y |
| 138 | 826800 | AK | N | UNMARRIED | VEG | N | N | ALLERGIC RHINITIS IN MOTHER | N | N | N | N | N | N | N | Y | N | N | Y | 12 | Y |
| 139 | 905922 | P | N | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | N | - | Y |
| 140 | 889348 | AK | - | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 4 | Y |
| 141 | 998236 | AK | N | MARRIED | NON VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 14 | N |
| 142 | 1007624 | AB | - | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 8 | Y |
| 143 | 1009043 | VS | - | MARRIED | NON VEG | Y | Y | - | N | N | N | N | N | N | N | N | N | N | N | - | Y |
| 144 | 35516 | V | N | MARRIED | NON VEG | N | N | - | N | N | N | N | N | EGGS | N | N | N | N | Y | 12 | Y |
| 145 | 927627 | HS | - | UNMARRIED | NON VEG | N | N | - | N | N | Y | N | N | N | N | N | N | N | N | - | N |
| 146 | 965601 | AS | - | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | N | - | N |
| 147 | 41606 | S | N | MARRIED | VEG | N | N | - | N | N | N | N | N | N | N | N | N | N | Y | 13 | N |
| 148 | 976852 | SN | - | MARRIED | VEG | Y | N | - | N | N | N | N | N | N | N | N | N | N | Y | 2 | N |
| 149 | 1004100 | OP | - | MARRIED | NON VEG | N | Y | - | N | N | N | N | N | N | N | N | N | N | Y | 6 | N |
| 150 | 1024850 | NS | - | MARRIED | NON VEG | N | Y | - | N | N | N | N | N | N | N | N | N | N | N | - | Y |

| Serial Number | MRD number | Name | mination | | Diagnosis | Question 1 | Question 2 | Question 3 | Question 4 | Question 5 | Question 6 | Question 7 | Question 8 | Question 9 | Question 10 | DLQI Score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Angioedema | Any other features | | | | | | | | | | | | |
| 130 | 984132 | MK | N | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 0 | 3 | 1 | 2 | 0 | 2 | 1 | 1 | 0 | 13 |
| 131 | 866919 | SS | N | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 1 | 3 | 2 | 3 | 0 | 2 | 1 | 1 | 3 | 19 |
| 132 | 991866 | KK | N | - | CHRONIC SPONTANEOUS URTICARIA | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 |
| 133 | 888349 | AK | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 1 | 3 | 0 | 2 | 1 | 2 | 0 | 0 | 0 | 11 |
| 134 | 984740 | DK | N | - | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM | 3 | 1 | 3 | 2 | 3 | 1 | 3 | 1 | 1 | 2 | 20 |
| 135 | 907411 | S | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 3 | 1 | 0 | 2 | 0 | 1 | 0 | 1 | 1 | 11 |
| 136 | 991655 | JK | N | ERYTHEMA | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM | 0 | 3 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 5 |
| 137 | 835918 | VK | N | ERYTHEMA | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 |
| 138 | 826800 | AK | N | ERYTHEMA | CHRONIC SPONTANEOUS URTICARIA WITH SYMPTOMATIC DERMOGRAPHISM | 2 | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 9 |
| 139 | 905922 | P | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 6 |
| 140 | 889348 | AK | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 0 | 3 | 2 | 1 | 0 | 2 | 1 | 0 | 0 | 11 |
| 141 | 998236 | AK | Y | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 2 | 3 | 0 | 1 | 0 | 3 | 2 | 2 | 3 | 19 |
| 142 | 1007624 | AB | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | 7 |
| 143 | 1009043 | VS | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 5 |
| 144 | 35516 | V | N | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 0 | 2 | 0 | 2 | 0 | 2 | 0 | 1 | 3 | 13 |
| 145 | 927627 | HS | N | - | CHOLINERGIC URTICARIA | 2 | 0 | 2 | 3 | 1 | 2 | 1 | 0 | 0 | 0 | 11 |
| 146 | 965601 | AS | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 4 |
| 147 | 41606 | S | N | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 1 | 3 | 1 | 1 | 0 | 1 | 0 | 1 | 2 | 12 |
| 148 | 976852 | SN | N | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 0 | 1 | 1 | 2 | 0 | 1 | 0 | 1 | 1 | 10 |
| 149 | 1004100 | OP | Y | - | CHRONIC SPONTANEOUS URTICARIA | 2 | 3 | 1 | 0 | 0 | 0 | 3 | 2 | 0 | 3 | 14 |
| 150 | 1024850 | NS | Y | - | CHRONIC SPONTANEOUS URTICARIA | 3 | 3 | 2 | 0 | 1 | 1 | 3 | 2 | 1 | 2 | 18 |

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No. BFUHS/2K21p-TH/ 5010

Date 20/1/2021

The Principal,
DMC Ludhiana

**Subject:** **Approval of Plan of Thesis.**

This is to inform you that the Faculty of Medical Sciences in its meeting held on 22.01.2021 has approved the plan of thesis of **Shriya Garg**, a student of your college for **MD Dermatology, Venerology & Leprosy** along with the names of Supervisor/Co-Supervisor as under:-

**Topic Plan of Thesis**
To study the quality of life index in chronic urticaria

Supervisor
Dr. Sukhjot Kaur
Assoc. Prof.,
Dept. of Dermatology,
DMCH, Ludhiana.

Co-Supervisor
Dr. Sunil Gupta
Prof. & Head,
Dept. of Dermatology,
DMCH, Ludhiana.

The student has to submit the three copies of thesis (along with PDF format) , to the Controller of Examinations, BFUHS, Faridkot, at least six months before the commencement of theory examination, if he/she is otherwise eligible to take the examination. He /She must directed to attach a photocopy of this letter with the forwarding letter while submitting thesis to the University along with the letter of approval of University for change of supervisor/Co-Supervisor, change of topic,( if any).

SP Singh

Dr. S P Singh MS(Oph)
Controller of Examinations

*Note :*

1. ***If any discrepancy found regarding topic of thesis or Supervisor/Co-Supervisor, inform undersigned within one month after issue of this letter.***
2. *The student may submit the thesis as per the schedule already conveyed i.e for May/June examination 30th Nov of the preceding the year of examination and for Nov/Dec examinations 31st May of the year of examination.*

# TO STUDY THE QUALITY OF LIFE INDEX IN CHRONIC URTICARIA

THESIS PROPOSAL

FOR APPROVAL OF SUBJECT OF THESIS TO BE SUBMITTED IN

PARTIAL FULFILMENT OF THE REQUIREMENTS

FOR THE DEGREE OF

MD

In

Department of Dermatology, Venereology and Leprosy

OF THE

BABA FARID UNIVERSITY OF HEALTH SCIENCES

FARIDKOT

November, 2019

Dr. Shriya Garg

Department of Dermatology, Venereology and Leprosy
DAYANAND MEDICAL COLLEGE AND HOSPITAL
LUDHIANA

# ABSTRACT OF PLAN OF THESIS

| | |
|---|---|
| Title | To study the Quality of Life Index in Chronic Urticaria |
| For the degree of | M.D. Dermatology, Venereology & Leprology |
| Name of the candidate | Dr. Shriya Garg |
| Supervisor | Dr. Sukhjot Kaur, Associate Professor, Department of Dermatology, DMCH Ludhiana |
| Co-supervisor | Dr. Sunil Gupta, Professor and Head, Department of Dermatology, DMCH, Ludhiana |
| Institution | Dayanand Medical College & Hospital, Ludhiana |
| University | Baba Farid University of Health Sciences, Faridkot |

**Introduction:** Urticaria is a common problem in skin department and its impact on quality of life needs to be studied more extensively to know how people cope up with it and what do they expect when they visit a hospital for the same.

**Aim of study:** To study the quality of life index in patients suffering from chronic urticaria and to study the demographic characteristics of urticaria.

**Materials and methods:** The study will be conducted at Dayanand Medical College and Hospital, Ludhiana on patients of urticaria. A total of one hundred and fifty (150) patients will be included in this study to study about their quality of life using a questionnaire designed for the same.

**Clinical significance:** To improve upon the current treatment lines in urticaria and to improve the quality of life of people suffering from urticaria.

**Keywords:** Urticaria, Quality of life.

| (Signature) | (Signature) | (Signature) | (Signature) |
|---|---|---|---|
| Candidate | Co-supervisor | Supervisor | Principal |

## CERTIFICATE OF FACILITIES AVAILABLE

This is to certify that the facilities for work on the subject of thesis titled **"To Study the Quality of Life Index in Chronic Urticaria"** exist in the Department of Dermatology, Venereology and Leprosy, DMC&H, Ludhiana and will be provided to the candidate. We will see that the data being included in the thesis is genuine and is collected by the candidate herself under our supervision and guidance.

**Supervisor**

**Dr. Sukhjot Kaur**
Associate Professor
Department of Dermatology
DMCH, Ludhiana

**Co-Supervisor(s)**

**Dr. Sunil Kumar Gupta**
Professor and Head
Department of Dermatology
DMCH, Ludhiana

**Head of the Department**

**Dr. Sunil K Gupta**
Professor & Head
Department of Dermatology
DMCH, Ludhiana

Place : DMCH Ludhiana

Date : 4-12-19

# APPROVAL PROFORMA
# BY
# RESEARCH & ETHICAL COMMITTEE
# DAYANAND MEDICAL COLLEGE & HOSPITAL, LUDHIANA

| | |
|---|---|
| **Name of candidate** | Dr. Shriya Garg |
| **Department** | Dermatology |
| **Topic of Thesis** | To study the Quality of Life Index in Chronic Urticaria |
| **Likely date of appearing in PG examination** | May 2022 |
| **Date of enrollment** | 06th May, 2019 |
| **Name of Head of Department** | Dr. Sunil K Gupta |
| **1) Supervisor**<br>**2) Co-Supervisor(s)** | Dr. Sukhjot Kaur<br>Dr. Sunil Kumar Gupta |
| **Signature of Members of Research Committee with Stamp** | **Signature of Members of Ethics Committee with Stamp** |
| Dr. Jaspal Singh<br>(Professor & Head, Surgery) | Mr. A K Jindal<br>(Member, Ethics Committee) |
| Dr. Dinesh Gupta<br>(Professor & Head, Medicine) | Dr. Anu Sharma<br>(Professor, Anatomy) |
| Dr. Sandeep Kaushal<br>(Assistant Dean Academics) | Dr. Deepinder K Chhina<br>(Professor & Head, Microbiology) |
| Dr. Rajoo Singh Chhina<br>(Dean Academics) | Dr. Neena Sood<br>(Professor & Head, Pathology) |
| Dr. Gurpreet S Wander<br>(Vice Principal) | Dr. Gurpreet S Wander<br>(Vice Principal) |
| | Dr. Gagandeep Singh<br>(Secretary, Ethics Committee<br>Professor & Head, Neurology) |

**Approved: Yes / ~~No~~**

**Dr. Sandeep Puri**
**Chairperson**
**Research Committee**

Chairperson
Research Committee

**Approved: Yes / ~~No~~**

**Prof. Arvind Malhotra**
**Chairperson**
**Ethics Committee**

Chairperson
Ethics Committee

# BABA FARID UNIVERSITY OF HEALTH SCIENCES, FARIDKOT

## PROFORMA FOR REGISTRATION OF SUBJECT FOR DISSERTATION

| | | |
|---|---|---|
| 1 | NAME OF THE CANDIDATE AND ADDRESS | Dr. Shriya Garg<br>C/O Bhagwati Trading Co,<br>Near bus stand, Sangat Mandi,<br>Distt- Bathinda, Punjab. PIN-151401 |
| 2 | NAME OF THE INSTITUTE | Dayanand Medical College & Hospital, Ludhiana |
| 3 | COURSE OF STUDY AND SUBJECT | M.D. Dermatology, Venereology And Leprology |
| 4 | DATE OF ADMISSION OF COURSE | 06-05-2019 |
| 5 | TITLE OF THE TOPIC | To Study the Quality of Life Index in Chronic Urticaria |

## 6. BRIEF RESUME OF THE INTENDED WORK

### 6.1 NEED FOR THE STUDY

Quality of life (QOL) indices assess the effects of disease on patient's well-being. Urticaria is a common problem presenting in skin department and its impact on quality of life needs to be studied more extensively to know how people cope with it and their expectations when they visit a hospital for the same.

Urticaria is one of the most common presenting complaint in the department of dermatology.

Urticaria is defined as a disease presenting with weals which are pruritic in nature and may sometimes present with angioedema. There are a number of causes of urticaria like infections, parasitic infestation, food items etc. Sometimes a particular cause can be found out but most of the times the causative factor remains unknown. A detailed history taking usually remains the best tool to determine the cause of urticaria.

Urticaria (both acute and chronic) has a great impact on people suffering from it. The constant itching and the need to avoid triggers (like cold, sweat, food items, heat) takes a toll on people, making them socially awkward, avoiding social gatherings, interfering with their daily activities, work/ studies.

Studying the quality of life of these patients will not only help us to know about the efficacy of the current treatment line but also the various parameters we can improve upon. Antihistamines being the mainstay of the treatment in urticaria often need to be carried on for a long period of time to alleviate the symptoms. Therefore these patients have to deal with side effects of antihistamines like dizziness and sedation almost every day which further interferes with their day to day activities.

Measurement of the impact of skin disease on the quality of life is also required to aid clinical decision making and for clinical research.

Since urticaria (acute and chronic) can cause physical, psychological and occupational problems, the clinico-epidemiological data can be

helpful in creating public awareness and development of preventive and treatment strategies.

Various parameters of life are affected by chronic urticaria. The effect of chronic urticaria on these parameters of life can be assessed using questions.

The DLQI (Dermatology life quality index) is a questionnaire which is used widely to assess the effect of skin diseases on quality of life. It assesses the following parameters- Symptoms, feelings, daily activities, leisure, work, school, personal relationships, treatment. This questionnaire can be used on any chronic skin disease to assess the quality of life.

Assessment of quality of life of patients suffering from chronic urticaria can help in deciding the next line of management. The clinician can focus on the parameter of life that is affected the most by chronic urticaria and device a treatment plan for the same.

Following treatment advice, quality of life can be assessed on a regular basis to know how effective the current of line of treatment is, and whether more aggressive options are required.

Therefore, by having an idea about the quality of life of people suffering from chronic urticaria, can open up the gates for research of newer treatment options for the same.

## 6.2 REVIEW OF LITERATURE

Dermatological diseases are considered as the fourth leading cause of the world's non-fatal burden and is expressed as years lost due to disability. They are the 18th leading cause of world's health burden that is expressed as disability-adjusted life years (DALYs). Although dermatological diseases are non fatal, they have an impact on the health-related quality of life (HRQoL) and daily activities of patients, which have a substantial impact on the society as indirect costs.[1]

Urticaria is used to describe a disease that may present with short lived itchy weals, angioedema or both. It may be spontaneous or inducible. It can be acute (disease resolving in less than 6 weeks) or chronic (continuous disease lasting for 6 weeks or more). The intermittent and the episodic presentations are included in the definition of chronic urticarial.[2]

A weal is a term used for transient, well-demarcated, superficial pink or pale swellings of the dermis due to reversible exudation of plasma in the skin that fade within hours, without leaving a mark. They are very itchy with a surrounding red flare.[2]

The term angioneurotic oedema denotes similar but larger swellings of the deep dermal, sub-cutaneous and sub mucosal tissues. The other names are angioedema, giant urticaria and Quinke's oedema.[3]

Women to men ratio for chronic spontaneous urticaria is 2:1 but there is no consistent sex difference in acute spontaneous urticaria and the inducible urticarias.[2]

Sheldon reported an incidence of 15%. Prevalence of urticarial is reported as 0.1% by Hellgren. It is estimated that more than one fifth of the population suffer at one time. 60% of patients are in the age group of 20-40 years. Incidence is comparatively higher in older age group.[3]

The underlying pathophysiology of chronic urticaria is mast cell activation, with release of histamine and other mast cell mediators. In chronic idiopathic urticaria, a weal producing factor has been recognized in the serum of 60% patients. There is evidence for functional autoantibodies against the high affinity IgE receptor or IgE or

both in half of these patients. These autoantibodies release histamine from mast cells and basophils. It is therefore likely that in chronic idiopathic urticaria there is an autoimmune basis for up to 30%.[4]

Although some cases of acute urticaria can be ascribed to immediate hypersensitivity, food, infection or drug intolerance, the cause in at least 60% of patients remains unknown and may be multifactorial.[2]

It is most important to distinguish the CIU from physical urticaria. This is because, if it turns out that the reason for chronic urticarial is a physical urticaria in an individual, it almost invariably obviates the necessity for investigation beyond any challenge testing necessary to confirm the diagnosis.[5]

There are number of aggravating factors that can be avoided by simple measures. The treating physician can identify these factors with careful history taking. These include diet, alcohol, drugs, viral infections, local heat, friction, and mental stress.[6]

There is no need for extensive diagnostic procedures and tests in acute urticaria, unless allergic urticaria is suspected. The diagnosis of acute urticaria is primarily based on a thorough history, which should cover possible trigger factors, such as infections (e.g., acute viral upper respiratory infections), medications (e.g., non-steroidal analgesic drugs), and foods.[7]

Diagnostic procedures in Chronic spontaneous Urticaria are performed to characterize possible underlying causes, as eliminating them will cure patients. One or more of the following most common causes of CsU can be found: (i) auto-reactivity (ii) infection, and (iii) intolerance in upto 80% patients.[7,8] The impairment of quality of life should be assessed routinely in patients suffering from CsU as they are highly affected by the disease.[9]

CU interferes with daily life and subjective well being; some patients' health status is comparable to that of coronary artery disease and severe asthma patients. It also causes inconvenience in family structures, compromises performance at work, school, and negatively impacts the leisure activities.[10-12]

Urticaria is assessed with urticaria activity score (UAS). The UAS measures two symptoms-number of wheals and intensity of itching-each on a 0-3 scale each day [13]

Antihistamines are the first line treatment for all patients with CU. Treatment is generally started with nonsedating antihistamine in the daytime and sedating antihistamine in the night. Classic H1 antihistamines include chlorpheniramine, hydroxyzine, and diphenhydramine. Their major side effect is sedation. Second generation H1 antihistamines are non sedating and these include loratadine, cetirizine, terfenadine, and mizolastine. Second generation H1 antihistamine derivatives include desloratadine, levocetirizine, and fexofenadine. H2 antihistamines include cimetidine, ranitidine, famotidine and nizatadine.[5]

Doxepin is a tricyclic antidepressant and is used as the second line of treatment if antihistamines do not work.[6]

In severe urticaria, oral corticosteroids are effective at high doses, e.g. prednisolone 0.5 mg/kg/day. It can be used as rescue treatment over 1–3 days but prolonged use should be avoided because of the risk of side effects. Clinical situation determines the choice of other second line treatment modalities.[2]

Montelukast is a leukotriene receptor antagonist. It works well for aspirin-sensitive urticaria. It does not work in all types of urticaria.[6]

For patients with severe unremitting spontaneous urticaria which is not responding to conventional therapy, immunomodulatory strategies have been tested in small uncontrolled trials. Plasmapheresis gave good results in six out of eight such patients with autoimmune urticaria for 3–8 weeks only. This highlights the likely relevance of functional autoantibodies to disease activity.[2]

Skin pruritus causes variable discomfort, as well as lesions, which, depending on their number and location, may harm an individual's physical appearance and social life.[10,14]

Quality of life refers to the functional effects of illness and its treatment from the patient's perspective. Though it is a subjective concept, it has gained clinical and economic importance over the past decade. It is

now a fundamental indicator in all chronic diseases and in the comparative effectiveness of different treatments.[15]

Existing evidence indicates that chronic symptoms of urticaria have a detrimental effect on the quality of life (QoL) including daily activities and emotional well-being.[16-18]

For the assessment of disease activity in patients with urticaria, European Academy of Allergology and Clinical Immunology (EAACI)/Global Allergy and Asthma European Network (GA²LEN)/European Dermatology Forum (EDF)/World Allergy Organization (WAO) guidelines recommend the use of Urticaria Activity Score (UAS).[16,19]

The Dermatology Life Quality Index (DLQI) was the first construct for assessing the quality of life specifically related to dermatology, developed by Finlay and Khan in 1994.[20] There are 10 questions and each question is ranged from 0-3. Maximum DLQI is 30 and minimum is 0. Higher score indicates poor quality of life.[21]

The Dermatology Life Quality Index questionnaire is designed for use in patients over the age of 16. It is a self-explanatory questionnaire. It can be simply handed to the patient and the patient is asked to fill it in without the need for detailed explanation. The questions are classified to 6 headings items: symptoms and feelings (questions 1 and 2), daily activities (questions 3 and 4), leisure (questions 5 and 6) and personal relationships (questions 8 and 9) each item with maximum score 6; work and school (question 7), and treatment (question 10) each item with maximum score 3.[22]

DLQI has been established as a valid, reliable and clinically useful outcome measure for assessing QOL in patients with CIU in a study by Lennox et al.[23]

A study of 50 patients was conducted in India in 2006 by K V Godse to assess the quality of life in patients of chronic urticaria using DLQI in which the mean score was 7.16.[22]

## 6.3 AIMS AND OBJECTIVES OF THE STUDY

1. To study the quality of life in patients suffering from Chronic Urticaria.

## 7. MATERIALS AND METHODS

### 7.1 Source of Data

Patients attending outpatient and inpatient Department of Dermatology of Dayanand Medical College and Hospital, Ludhiana, will constitute the study material and the source of data.

### 7.2 METHOD OF COLLECTION OF DATA

**INCLUSION CRITERIA:**

- A total of one hundred and fifty (150) clinically diagnosed cases of chronic urticaria attending outpatient and inpatient Department of Dermatology of Dayanand Medical College and Hospital, Ludhiana, will be included in the study.
- Patients with disease duration of 6 weeks or more will be included.
- Patients more than 18 years of age

**EXCLUSION CRITERIA:**

- Patients not willing to participate
- Patients not willing to fill the questionnaire
- Patients not willing to give consent
- Patients less than 18 years of age.

**METHOD:**

A total of hundred and fifty (150) clinically diagnosed cases of chronic urticaria above the age of 18 years will be included in this study. After informed consent, detailed history of the patients including duration of disease, history of previous treatment taken, demographic details, satisfaction with treatment, will be taken. The patient will be asked to fill a detailed questionnaire.

The dermatology life quality index (DLQI) is a ten-question questionnaire used to measure the impact of skin disease on the quality of life of an affected person. It is designed for people aged 16 years and above with a recall period of 7 days.

It is a detailed self-explanatory questionnaire which will be available in 3 languages, viz- English, Hindi and Punjabi. It will be handed over to

the patient to be filled by the patient. It is usually completed in 2-3 minutes.

The questions are classified to 6 headings items: symptoms and feelings (questions 1 and 2), daily activities (questions 3 and 4), leisure (questions 5 and 6), work and school (7), personal relationships (8 and 9) and treatment (10) [23]

Responses to items 1-6 and 8-10 have the options "very much", "a lot", "a little" and "not at all" and are scored as 3, 2, 1 and 0 respectively. Items 3-6 and 8-10 also have the option "not relevant" which is given a score of 0. Item 7 has 2 parts- the first part has the options of "yes" and "no" which are scored as 3 and 0 respectively. The second part has 3 options "a lot", "a little" and "not at all" which are scored as 2, 1 and 0 respectively. Thus the maximum score for each question is 3 and minimum score is 0. The maximum DLQI score is 30 and minimum is 0.[23]

Apart from the questionnaire, the following data will be collected:

1. Patient's details including name, age, sex, CR No., history (past, personal, family, treatment)
2. Local examination findings
3. Clinical diagnosis

**Number of cases**

One Hundred and fifty (150) cases

**Outcome**

It will be evaluated in view of –

1. Type of urticaria
2. DLQI score

**Statistical Analysis**

Data will be described in terms of range; mean ±standard deviation (± SD), frequencies (number of cases) and relative frequencies (percentages) as appropriate. All statistical calculations will be done using SPSS (Statistical Package for the Social Science) SPSS 21 version statistical program for Microsoft Windows.

**7.3 DOES THE STUDY REQUIRE ANY INVESTIGATIONS OR INTERVENTIONS TO BE CONDUCTED ON PATIENTS OR OTHER HUMANS OR ANIMALS? IF SO, PLEASE DESCRIBE BRIEFLY.**

No, the study does not require any investigations or interventions to be conducted on patients or other humans or animals.

**7.4 HAS ETHICAL CLEARANCE BEEN OBTAINED FROM YOUR INSTITUTION IN CASE OF 7.3?**

Attached herewith.

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# PROFORMA

**Serial No:** **Date:**

**Name:** **Age:**

**Sex:** **MRD No:** **Ph No:**

**Occupation:**

**Address:**

**Chief Complaints:**

**Duration:**

**Past History:** H/O Diabetes mellitus/ tuberculosis/ bronchial asthma/ hypertension/ CAD/ seizure episodes/ thyroid disorder

**H/O acute urticaria/ angioedema**

**Treatment History:**

**Personal History:**

**Family History:**

**Aggravating factors if any:** Heat/ cold/ sweat/ pressure/ insect bite/ food items/ drugs/ skin stroking/ infection/ others

**Satisfaction with Treatment-** Yes/ No

**Local examination:** **Weals present- Yes/No**
**No. of Weals (if present):**
**Dermographism:**
**Angioedema:**
**Any other features if present:**

**Diagnosis:**

**Signature of Candidate** **Signature of Supervisor**

## DERMATOLOGY LIFE QUALITY INDEX

**DLQI**

Hospital No: Date:
Name: Score:
Address: Diagnosis:

**The aim of this questionnaire is to measure how much your skin problem has affected your life OVER THE LAST WEEK. Please tick ☑ one box for each question.**

| | | | | |
|---|---|---|---|---|
| **1.** | Over the last week, how **itchy**, **sore**, **painful** or **stinging** has your skin been? | Very much<br>A lot<br>A little<br>Not at all | ☐<br>☐<br>☐<br>☐ | |
| **2.** | Over the last week, how **embarrassed** or **self conscious** have you been because of your skin? | Very much<br>A lot<br>A little<br>Not at all | ☐<br>☐<br>☐<br>☐ | |
| **3.** | Over the last week, how much has your skin interfered with you going **shopping** or looking after your **home** or **garden**? | Very much<br>A lot<br>A little<br>Not at all | ☐<br>☐<br>☐<br>☐ | Not relevant ☐ |
| **4.** | Over the last week, how much has your skin influenced the **clothes** you wear? | Very much<br>A lot<br>A little<br>Not at all | ☐<br>☐<br>☐<br>☐ | Not relevant ☐ |
| **5.** | Over the last week, how much has your skin affected any **social** or **leisure** activities? | Very much<br>A lot<br>A little<br>Not at all | ☐<br>☐<br>☐<br>☐ | Not relevant ☐ |
| **6.** | Over the last week, how much has your skin made it difficult for you to do any **sport**? | Very much<br>A lot<br>A little<br>Not at all | ☐<br>☐<br>☐<br>☐ | Not relevant ☐ |
| **7.** | Over the last week, has your skin prevented you from **working** or **studying**? | Yes<br>No | ☐<br>☐ | Not relevant ☐ |
| | If "No", over the last week how much has your skin been a problem at **work** or **studying**? | A lot<br>A little<br>Not at all | ☐<br>☐<br>☐ | |
| **8.** | Over the last week, how much has your skin created problems with your **partner** or any of your **close friends** or **relatives**? | Very much<br>A lot<br>A little<br>Not at all | ☐<br>☐<br>☐<br>☐ | Not relevant ☐ |
| **9.** | Over the last week, how much has your skin caused any **sexual difficulties**? | Very much<br>A lot<br>A little<br>Not at all | ☐<br>☐<br>☐<br>☐ | Not relevant ☐ |
| **10.** | Over the last week, how much of a problem has the **treatment** for your skin been, for example by making your home messy, or by taking up time? | Very much<br>A lot<br>A little<br>Not at all | ☐<br>☐<br>☐<br>☐ | Not relevant ☐ |

**Please check you have answered EVERY question. Thank you.**

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## त्वचारोग जीवन गुणवत्ता सूची

डीएलक्यूआई

अस्पताल क्रमांक :  दिनांक :  स्कोर :

नाम :  रोग निदान :

पता :

**इस प्रश्नोत्तरी का उद्देश्य यह नापना है कि आपकी त्वचा की परेशानी ने गत सप्ताह में आपके जीवन पर कितना प्रभाव डाला है. कृपया हर प्रश्न के लिए एक बाक्स में टिक करें.**

| | | | | |
|---|---|---|---|---|
| १. | गत् सप्ताह, आपकी त्वचा में कितनी **खुजली, पीड़ा, दर्द** या **चुभन** लग रहा था? | बहुत ज्यादा<br>बहुत<br>थोड़ा<br>बिलकुल नहीं | ☐<br>☐<br>☐<br>☐ | |
| २. | गत् सप्ताह, अपनी त्वचा के कारण आप कितने **शर्मसार** या **स्व चैतन्य** हुए? | बहुत ज्यादा<br>बहुत<br>थोड़ा<br>बिलकुल नहीं | ☐<br>☐<br>☐<br>☐ | |
| ३. | गत् सप्ताह, आपकी त्वचा ने आपकी **खरीदारी, घर या गार्डन** की देखभाल के काम पर कितना प्रभाव डाला? | बहुत ज्यादा<br>बहुत<br>थोड़ा<br>बिलकुल नहीं | ☐<br>☐<br>☐<br>☐ | लागू नहीं ☐ |
| ४. | गत् सप्ताह, आपकी त्वचा ने आपके **कपड़े** पहनने पर कितना प्रभाव डाला? | बहुत ज्यादा<br>बहुत<br>थोड़ा<br>बिलकुल नहीं | ☐<br>☐<br>☐<br>☐ | लागू नहीं ☐ |
| ५. | गत् सप्ताह, आपकी त्वचा ने आपके **सामाजिक जीवन** या **फुर्सत के समय** की गतिविधियों पर कितना प्रभाव डाला? | बहुत ज्यादा<br>बहुत<br>थोड़ा<br>बिलकुल नहीं | ☐<br>☐<br>☐<br>☐ | लागू नहीं ☐ |
| ६. | गत् सप्ताह, आपकी त्वचा ने आपके **खेलकूद** के लिए कितनी मुश्किलें खड़ी कीं? | बहुत ज्यादा<br>बहुत<br>थोड़ा<br>बिलकुल नहीं | ☐<br>☐<br>☐<br>☐ | लागू नहीं ☐ |
| ७. | गत् सप्ताह, आपकी त्वचा ने आपके **काम** या **पढ़ाई** में कोई रुकावट डाली? | हां<br>नहीं | ☐<br>☐ | लागू नहीं ☐ |
| | इसका उत्तर अगर नहीं है, तो गत् सप्ताह आपकी त्वचा ने आपके **काम** या **पढ़ाई** में कितनी परेशानी खड़ी की ? | बहुत<br>थोड़ा<br>बिलकुल नहीं | ☐<br>☐<br>☐ | |
| ८. | गत सप्ताह, आपकी त्वचा ने आपके **पार्टनर** या किसी भी **करीबी मित्र** या **रिश्तेदार** के लिए कितनी परेशानी खड़ी की | बहुत ज्यादा<br>बहुत<br>थोड़ा<br>बिलकुल नहीं | ☐<br>☐<br>☐<br>☐ | लागू नहीं ☐ |
| ९. | गत् सप्ताह, आपकी त्वचा के कारण कितनी **सेक्सुअल मुश्किलें** आईं? | बहुत ज्यादा<br>बहुत<br>थोड़ा<br>बिलकुल नहीं | ☐<br>☐<br>☐<br>☐ | लागू नहीं ☐ |
| १०. | गत सप्ताह, आपकी त्वचा के **उपचार** ने आपके लिए कितनी मुश्किलें बढ़ाईं, उदाहरण के लिए घर को अस्त-व्यस्त बनाना, या समय का नुकसान करना. | बहुत ज्यादा<br>बहुत<br>थोड़ा<br>बिलकुल नहीं | ☐<br>☐<br>☐<br>☐ | लागू नहीं ☐ |

**कृपया देख लें कि आपने हर प्रश्न का उत्तर दे दिया है. धन्यवाद.**

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ENGLISH TO HINDI
18 JANUARY 2008

## ਚਮੜੀ ਵਿਗਿਆਨ ਜੀਵਨ ਗੁਣਵੱਤਾ ਸੂਚਕ

ਡੀਐਲਕਿਊਆਈ

ਹਸਪਤਾਲ ਸੰਖਿਆ: ਮਿਤੀ: ਅੰਕ:

ਨਾਂ: ਨਿਦਾਨ:

ਪਤਾ:

**ਇਸ ਪ੍ਰਸ਼ਨਾਵਲੀ ਦਾ ਉਦੇਸ਼ ਇਹ ਮਾਪਣਾ ਹੈ ਕਿ ਪਿਛਲੇ ਹਫਤੇ ਤੁਹਾਡੀ ਚਮੜੀ ਦੀ ਬਿਮਾਰੀ ਨੇ ਤੁਹਾਡੇ ਜੀਵਨ ਨੂੰ ਕਿਹਨਾਂ ਪ੍ਰਭਾਵਿਤ ਕੀਤਾ ਹੈ। ਕਿਰਪਾ ਕਰਕੇ ਹਰ ਇੱਕ ਪ੍ਰਸ਼ਨ ਲਈ ਇੱਕ ਖਾਨੇ ਵਿੱਚ ਨਿਸ਼ਾਨ ਲੱਗਾਓ।**

| | | | | |
|---|---|---|---|---|
| 1. | ਪਿਛਲੇ ਹਫਤੇ ਵਿੱਚ, ਤੁਹਾਡੀ ਚਮੜੀ "ਤੇ ਕਿੰਨੀ ਖਾਰਸ਼, ਸੋਜ, ਦਰਦ ਜਾਂ ਚੋਭ ਹੋਈ? | ਬਹੁਤ ਜਿਆਦਾ<br>ਬਹੁਤ<br>ਥੋੜ੍ਹੀ ਜਿਹੀ<br>ਬਿਲਕੁਲ ਨਹੀਂ | ☐<br>☐<br>☐<br>☐ | |
| 2. | ਪਿਛਲੇ ਹਫਤੇ ਵਿੱਚ, ਕੁਝ ਆਪਣੀ ਚਮੜੀ ਕਾਰਣ ਕਿੰਨੇ ਸ਼ਰਮਿੰਦਾ ਜਾਂ ਅਡਸ-ਸਬੋਤ ਰਹੇ? | ਬਹੁਤ ਜਿਆਦਾ<br>ਬਹੁਤ<br>ਥੋੜ੍ਹੀ ਜਿਹੀ<br>ਬਿਲਕੁਲ ਨਹੀਂ | ☐<br>☐<br>☐<br>☐ | |
| 3. | ਪਿਛਲੇ ਹਫਤੇ ਵਿੱਚ, ਤੁਹਾਡੀ ਚਮੜੀ ਨੇ ਤੁਹਾਡੇ ਖਰੀਦਾਰੀ ਲਈ ਜਾਣ ਜਾਂ ਆਪਣੇ ਘਰ ਜਾਂ ਬਾਗ ਦੀ ਦੇਖਭਾਲ ਕਰਨ ਵਿੱਚ ਕਿਹਨਾਂ ਦਖਲ ਦਿੱਤਾ? | ਬਹੁਤ ਜਿਆਦਾ<br>ਬਹੁਤ<br>ਥੋੜ੍ਹੀ ਜਿਹੀ<br>ਬਿਲਕੁਲ ਨਹੀਂ | ☐<br>☐<br>☐<br>☐ | ਸੰਬੰਧਤ ਨਹੀਂ ਹੈ ☐ |
| 4. | ਪਿਛਲੇ ਹਫਤੇ ਵਿੱਚ, ਤੁਹਾਡੀ ਚਮੜੀ ਨੇ ਤੁਹਾਡੇ ਕਪੜੇ ਪਾਉਣ ਜਾਣ ਵਾਲੇ **ਕੱਪੜਿਆਂ** ਉੱਤੇ ਕਿਹਨਾਂ ਅਸਰ ਪਾਇਆ? | ਬਹੁਤ ਜਿਆਦਾ<br>ਬਹੁਤ<br>ਥੋੜ੍ਹੀ ਜਿਹੀ<br>ਬਿਲਕੁਲ ਨਹੀਂ | ☐<br>☐<br>☐<br>☐ | ਸੰਬੰਧਤ ਨਹੀਂ ਹੈ ☐ |
| 5. | ਪਿਛਲੇ ਹਫਤੇ ਵਿੱਚ, ਤੁਹਾਡੀ ਚਮੜੀ ਨੇ ਕਿਸੇ **ਸਮਾਜਕ** ਜਾਂ **ਖਾਲੀ** ਸਮੇਂ ਦੀਆਂ ਸਰਗਰਮੀਆਂ ਨੂੰ ਕਿਹਨਾਂ ਪ੍ਰਭਾਵਿਤ ਕੀਤਾ? | ਬਹੁਤ ਜਿਆਦਾ<br>ਬਹੁਤ<br>ਥੋੜ੍ਹੀ ਜਿਹੀ<br>ਬਿਲਕੁਲ ਨਹੀਂ | ☐<br>☐<br>☐<br>☐ | ਸੰਬੰਧਤ ਨਹੀਂ ਹੈ ☐ |
| 6. | ਪਿਛਲੇ ਹਫਤੇ ਵਿੱਚ, ਤੁਹਾਡੀ ਚਮੜੀ ਨੇ ਤੁਹਾਡਾ ਕਿਸੇ ਖੇਲ ਵਿੱਚ ਜਾਣਾ ਕਿਹਨਾਂ ਔਖਾ ਬਣਾ ਦਿੱਤਾ? | ਬਹੁਤ ਜਿਆਦਾ<br>ਬਹੁਤ<br>ਥੋੜ੍ਹੀ ਜਿਹੀ<br>ਬਿਲਕੁਲ ਨਹੀਂ | ☐<br>☐<br>☐<br>☐ | ਸੰਬੰਧਤ ਨਹੀਂ ਹੈ ☐ |
| 7. | ਪਿਛਲੇ ਹਫਤੇ ਵਿੱਚ, ਕੀ ਤੁਹਾਡੀ ਚਮੜੀ ਨੇ ਤੁਹਾਨੂੰ **ਕੰਮ** ਕਰਨ ਜਾਂ ਪੜ੍ਹਨ ਤੋਂ ਰੋਕਿਆ? | ਹਾਂ<br>ਨਹੀਂ | ☐<br>☐ | ਸੰਬੰਧਤ ਨਹੀਂ ਹੈ ☐ |
| | ਜੇਕਰ "ਨਹੀਂ", ਤਾਂ ਪਿਛਲੇ ਹਫਤੇ ਵਿੱਚ ਤੁਹਾਡੀ ਚਮੜੀ ਨੇ **ਕੰਮ** ਤੇ ਜਾਂ ਪੜ੍ਹਦੇ ਹੋਇਆਂ ਕਿਹਨੀ ਪਰੇਸ਼ਾਨੀ ਪੈਦਾ ਕੀਤੀ? | ਬਹੁਤ<br>ਥੋੜ੍ਹੀ ਜਿਹੀ<br>ਬਿਲਕੁਲ ਨਹੀਂ | ☐<br>☐<br>☐ | |
| 8. | ਪਿਛਲੇ ਹਫਤੇ ਵਿੱਚ, ਤੁਹਾਡੀ ਚਮੜੀ ਨੇ ਤੁਹਾਡੇ **ਭਾਈਵਾਲ** ਜਾਂ ਤੁਹਾਡੇ ਕਿਸੇ ਨੇੜਲੇ ਮਿੱਤਰ ਜਾਂ **ਰਿਸ਼ਤੇਦਾਰ** ਦੇ ਨਾਲ ਕਿਹਨੀ ਪਰੇਸ਼ਾਨੀ ਪੈਦਾ ਕੀਤੀ? | ਬਹੁਤ ਜਿਆਦਾ<br>ਬਹੁਤ<br>ਥੋੜ੍ਹੀ ਜਿਹੀ<br>ਬਿਲਕੁਲ ਨਹੀਂ | ☐<br>☐<br>☐<br>☐ | ਸੰਬੰਧਤ ਨਹੀਂ ਹੈ ☐ |
| 9. | ਪਿਛਲੇ ਹਫਤੇ ਵਿੱਚ, ਤੁਹਾਡੀ ਚਮੜੀ ਨੇ ਕਿਹਨੀਆਂ **ਹੋਰ** ਪਰੇਸ਼ਾਨੀਆਂ ਪੈਦਾ ਕੀਤੀਆਂ ਹਨ? | ਬਹੁਤ ਜਿਆਦਾ<br>ਬਹੁਤ<br>ਥੋੜ੍ਹੀ ਜਿਹੀ<br>ਬਿਲਕੁਲ ਨਹੀਂ | ☐<br>☐<br>☐<br>☐ | ਸੰਬੰਧਤ ਨਹੀਂ ਹੈ ☐ |
| 10. | ਪਿਛਲੇ ਹਫਤੇ ਵਿੱਚ, ਤੁਹਾਡੀ ਚਮੜੀ ਨਹੀਂ **ਇਲਾਜ** ਤੁਹਾਡੇ ਲਈ ਕਿਹਨੀ ਵੱਡੀ ਪਰੇਸ਼ਾਨੀ ਬਣਿਆ, ਮਿਸਾਲ ਵਜੋਂ, ਤੁਹਾਡੇ ਘਰ ਨੂੰ ਗੰਦਾ ਬਣਾਕੇ ਜਾਂ ਸਮਾਂ ਲੈਕੇ? | ਬਹੁਤ ਜਿਆਦਾ<br>ਬਹੁਤ<br>ਥੋੜ੍ਹੀ ਜਿਹੀ<br>ਬਿਲਕੁਲ ਨਹੀਂ | ☐<br>☐<br>☐<br>☐ | ਸੰਬੰਧਤ ਨਹੀਂ ਹੈ ☐ |

**ਕਿਰਪਾ ਕਰਕੇ ਜਾਂਚ ਕਰੋ ਕਿ ਤੁਸੀਂ ਹਰ ਇੱਕ ਪ੍ਰਸ਼ਨ ਦਾ ਉੱਤਰ ਦੇ ਦਿੱਤਾ ਹੈ। ਤੁਹਾਡਾ ਧੰਨਵਾਦ।**

© ਏ ਵਾਈ ਫਿਨਲੇ, ਜੀ ਕੇ ਖਾਨ, ਅਪ੍ਰੈਲ 1992, ਇਹ ਲਾਜਮੀ ਤੌਰ ਤੇ ਲੇਖਕਾ ਦੀ ਆਗਿਆ ਤੋਂ ਬਿਨਾ ਨਕਲ ਨਹੀਂ ਕੀਤਾ ਜਾਣਾ ਚਾਹੀਦਾ ਹੈ।

## INFORMED PATIENT CONSENT

Date: _____

I.....D/o, W/o, S/o.....

.....am willing to participate in the study **"To study the Quality of Life Index in Chronic Urticaria"**. I understand that I will be asked to fill the proforma as a part of the study. I will not be paid to participate in this study. I have fully understood that no special tests and extra expenditure in any form, merely for the purpose of thesis is being carried out. I am free to opt out the study any time without assigning any reason.

..... .....

Signature of the Witness Signature of the patient

Name:

**Signature of Candidate** **Signature of Supervisor**

# मरीज अनुमति फार्म

तिथि _____

मैं _____ पत्नी/पुत्र/पुत्री

_____ निवासी

_____

इस शोधकार्य **"To study the Quality of Life Index in Chronic Urticaria"** में भाग लेने के लिए सहमत हूँ। मैं इस शोधकार्य में भाग लेने के लिए अपनी स्वेच्छा से तैयार हूँ। मैं पुष्टि करता/करती हूँ की यह स्वीकृति देने के लिए मुझे कोई आर्थिक प्रलोभन नहीं दिया गया और न ही दबाव डाला गया है। मुझे इस शोधकार्य का उद्देश्य स्पष्ट कर दिया गया है और मुझे यह विश्वास है की यह विज्ञान और मानवता के लाभ के लिए है।

मैं इस शोधकार्य में भाग लेने के सम्बन्ध में किसी भी समय अपनी अस्वीकृति व्यक्त कर सकता/सकती हूँ और मेरे अस्वीकृति व्यक्त करने का मेरे इलाज पर कोई प्रभाव नहीं पड़ेगा।

_____ _____

गवाह के हस्ताक्षर रोगी के हस्ताक्षर/अंगूठे का निशान

नाम: नाम:

_____

अन्वेषक के हस्ताक्षर

_____

विद्यार्थी के हस्ताक्षर

# ਮਰੀਜ਼ ਰਜ਼ਾਮੰਦੀ ਫਾਰਮ

ਮਿਤੀ_____

ਮੈ_____ਪਤਨੀ/ਪੁੱਤਰ/ਪੁੱਤਰੀ_____ਵਾਸੀ

_____"

**To study the Quality of Life Index in Chronic Urticaria"** ਤੇ ਚਲ ਰਹੀ ਖੋਜ ਵਿਚ ਹਿੱਸਾ ਲੈਣ ਲਈ ਰਜ਼ਾਮੰਦ ਹਾਂ। ਇਸ ਖੋਜ ਕੰਮ ਵਿਚ ਹਿੱਸਾ ਲੈਣ ਲਈ ਮੈ ਆਪਣੀ ਮਰਜ਼ੀ ਨਾਲ ਤਿਆਰ ਹਾਂ। ਮੈ ਇਹ ਦਸਣਾ ਚਾਹੁੰਦਾ ਹਾਂ/ ਚਾਹੁੰਦੀ ਹਾਂ ਕੇ ਇਹ ਰਜ਼ਾਮੰਦੀ ਦੇਣ ਵਾਸਤੇ ਮੈਨੂ ਕਿਸੇ ਵੀ ਤਰਾਂ ਦਾ ਲੋਭ-ਲਾਲਚ ਨਹੀ ਦਿੱਤਾ ਗਿਆ ਅਤੇ ਨਾ ਹੀ ਕੋਈ ਦਬਾ ਪਾਇਆ ਗਿਆ ਹੈ। ਮੈਨੂ ਇਸ ਖੋਜ ਦਾ ਮਨੋਰਥ ਸਮਝਾ ਦਿੱਤਾ ਗਿਆ ਹੈ ਅਤੇ ਮੈਨੂ ਇਹ ਭਰੋਸਾ ਦਵਾਇਆ ਗਿਆ ਹੈ ਕੇ ਇਹ ਖੋਜ ਵਿਗਿਆਨ ਅਤੇ ਮਾਨਵਤਾ ਦੀ ਭਲਾਈ ਲਈ ਹੈ। ਮੈਨੂ ਇਸ ਖੋਜ ਕੰਮ ਵਿਚ ਹਿੱਸਾ ਲੈਣ ਦਾ ਢੰਗ – ਤਰੀਕਾ ਸਮਝਾ ਦਿੱਤਾ ਗਿਆ ਹੈ।

ਮੈ ਇਸ ਖੋਜ ਕੰਮ ਵਿਚ ਹਿੱਸਾ ਲੈਣ ਬਾਰੇ ਆਪਣੀ ਰਜ਼ਾਮੰਦੀ ਕਿਸੇ ਵੀ ਸਮੇ ਵਾਪਸ ਲੈ ਸਕਦਾ ਹਾਂ/ ਸਕਦੀ ਹਾਂ ਅਤੇ ਮੇਰੀ ਰਜ਼ਾਮੰਦੀ ਵਾਪਸ ਲੈਣ ਦਾ ਮੇਰੇ ਇਲਾਜ ਤੇ ਕੋਈ ਅਸਰ ਨਹੀ ਹੋਵੇਗਾ।

_____ _____

ਗਵਾਹ ਦੇ ਹਸਤਾਖਰ ਮਰੀਜ਼ ਦੇ ਹਸਤਾਖਰ

ਮਿਤੀ_____ ਮਿਤੀ_____

ਪਤਾ _____ ਪਤਾ _____

_____

ਨਿਰੀਖਕ ਦੇ ਹਸਤਾਖਰ

_____

ਸਿਖਿਆਰਥੀ ਦੇ ਹਸਤਾਖਰ